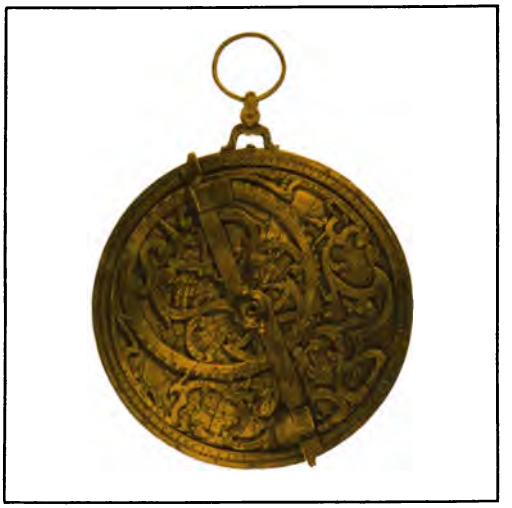

JOURNAL

OF THE

Philadelphia College of Pharmacy.

VOL. I. DECEMBER, 1825. NO. 1.

CONTENTS.

PHILADELPHIA:
Printed by William Brown.
SOLD BY
JUDAH DOBSON, *AGENT.*

1825.

JOURNAL

OF THE

Philadelphia College of Pharmacy.

VOL. I. MAY, 1826. NO. II.

CONTENTS.

SELECTED PAPERS.

PHILADELPHIA:

SOLD BY JUDAH DOBSON, *AGENT.*

Printed by William Brown.

1826.

JOURNAL

OF THE

Philadelphia College of Pharmacy.

VOL. I. SEPTEMBER, 1827. NO. III.

CONTENTS.

PHILADELPHIA.

SOLD BY JUDAH DOBSON, AGENT.

J. Harding, Printer, 85, Carter's Alley.

1827.

JOURNAL

OF THE

Philadelphia College of Pharmacy.

VOL. I. NOVEMBER, 1827. No. IV.

CONTENTS.

PHILADELPHIA:

SOLD BY JUDAH DOBSON, AGENT.

J. Harding, Printer.

1827

JOURNAL

OF THE

Philadelphia College of Pharmacy.

VOL. I. DECEMBER, 1825. NO. I.

INTRODUCTION.

The history of the progress of society is that of the division of labour, and there is no surer indication of advancement in the arts of civilization, than the multiplicity and subdivision of occupations. The present undertaking will, it is believed, happily illustrate this truth. In the first stages of the colony, the storekeeper was a dealer in all kinds of merchandise. He imported whatever he could sell, dry goods, groceries, ironmongery, books, paints, and medicine. Gradually the demand for each of these increased, and men devoted their capital and labour to vending merchandise of one species. The business of the apothecary was long a subordinate branch of the establishment of a physician, or carried on by the man who was at the same time a druggist and dealer in paints. Latterly, however, it has been nearly abandoned, both by the medical profession and the wholesale druggist. The drug factor, the druggist, the manufacturing chemist, the drug powderer, the paint and oil dealer, the varnish maker, and the apothecary, now divide and multiply the business which formerly centered in a single tradesman. In proportion as

the apothecary devoted himself to the cultivation of his appropriate art, he found it to become important and complicated. Its intimate connexion with modern chemistry has elevated it to the rank of a science; a complete mastery of all its details implies the knowledge of the manufacturer, the merchant, the physician, and the naturalist; and it requires to be pursued, not merely with the frugality and industry of a tradesman, but with the patient sagacity of an investigator of nature.

The necessity of keeping pace with the progress of the age, has long been felt among the druggists of Philadelphia. Accidental circumstances led them, in 1820, to associate for purposes of mutual benefit, and out of this union grew "The Philadelphia College of Pharmacy." This association, which originally comprehended sixty-eight druggists and apothecaries, or about one half the number in the city and liberties, was incorporated in 1822. As the first regularly organized school of Pharmacy in America, its establishment forms an era in the medical history of our country. Confining itself to objects of common and public utility, it has no feature of a monopoly. Its labours are restricted to the instruction in the school of Pharmacy, to the examination and inspection of drugs, to the preservation of harmony and correct conduct among its members, and to the cultivation of Pharmacy, and of a taste for science. Its influence in all these respects, and its growing reputation abroad, are already obvious.

More fully and extensively to achieve these purposes, it has decided to publish under its authority, "The Journal of the Philadelphia College of Pharmacy." This journal will be published in occasional numbers of

about 32 pages each, and will contain original essays, such transactions of the college as may be ordered for publication, and selections adapted to the nature of the work, from scientific books and journals.

The success of similar journals in Europe, encourages the hope that this may become both useful and creditable to the apothecaries of the United States. The "Bulletin de Pharmacie," afterwards the "Journal de Pharmacie," has been conducted for thirty years, by the "Pharmaciens" of Paris: it has added much to the knowledge of the age, and is a record honourable to the industry and attainments of its contributors. The genius of some of the most eminent chemists of the last and present age, received its first impulse and direction in the laboratory of the apothecary. Similar results will no doubt follow from the same causes in America. We have here, as there, a learned and discerning body of patrons and judges in the medical profession. Men versed in all the requisite sciences, will here, as there, engage in the business. A more liberal education, the competition of business, the rapid diffusion of information, will combine to raise the apothecary to the respectable rank which he occupies in Europe. Should the Journal of the Philadelphia College of Pharmacy contribute to these results, by awakening and fostering a spirit of research and experiment, although labouring in an obscure and humble portion of the vineyard of science, it will reap rewards, honourable to its contributors, and useful to the world at large.

CONDITIONS.

I. The Journal of the Philadelphia College of Pharmacy, will consist of original and selected papers on subjects connected with Pharmacy and Chemistry, and of such transactions of the College, as may be ordered for publication. It will be issued by the publishing committee, in monthly numbers, or as often as the materials in hand enable them to do it.

II. The price for each number, of 32 pages, will be twenty-five cents, payable on delivery.

III. The outside covers will be used as advertising sheets, at the rate of three dollars per page, for each page, with a discount of one-third to members of the college.

Original or selected communications are requested to be addressed to either of the publishing committee.

SAMUEL JACKSON, M. D.
HENRY TROTH,
SOLOMON TEMPLE,
ELLIS H. YARNALL,
DANIEL B. SMITH,
Publishing Committee.

Philadelphia, Nov. 7th, 1825.

OFFICERS AND COMMITTEES

OF THE

COLLEGE OF PHARMACY.

President—WM. LEHMAN.
Vice Presidents—STEPHEN NORTH,
SAML. P. WETHERILL,
Secretary—DANIEL B. SMITH.
Treasurer—WM. HEYL.

BOARD OF TRUSTEES.

DR. SAML. JACKSON,	WARDER MORRIS,
SOLOMON TEMPLE,	JOSEPH REAKIRT,
HENRY TROTH,	WM. BAKER,
PETER LEHMAN,	EDWARD B. GARRIGUES,
ALEXR. FULLERTON, JR.	DR. GEO. H. BURGIN,
CHS. YARNALL,	JNO. PRICE WETHERELL,
JACOB BIGONET,	EDMUND PRYOR,
A. S. ROBERTS,	JOSEPH ALLEN.

Chairman—HENRY TROTH.
Secretary—WM. BAKER.

STANDING COMMITTEES OF THE BOARD.

Committee of Inspection—D. B. Smith, Dr. S. Jackson, Warder Morris, Dr. Geo. H. Burgin, and P. Lehman.

Committee of Equity—W. Heyl, J. Allen, E. Pryor, J. Bigonet, J. Reakirt.

Library Committee—C. Yarnall, H. Troth, E. B. Garrigues.

Committee of Specimens—S. North, A. Fullerton, Jr. J. P. Wetherill.

ORIGINAL PAPERS.

On the preparation of Glauber's and Epsom Salt and Magnesia, from Sea Water, by DANL. B. SMITH.—*Read October,* 1825.

The fact that nearly all the Glauber's salt consumed in America is prepared from sea water, and the silence of authors in relation to this mode of obtaining it, will give interest to the following details. They have been communicated by a gentleman who was formerly engaged in large salt works in Massachusetts, at which all these salts were manufactured.

The brine at these works is pumped into vats of the capacity of six hundred or a thousand hogsheads, where it is concentrated by evaporation in the sun to the strength of a saturated solution. It is then drawn off into a second vat, called the pickle vat, of about half the size of the first, in which it is cleared from impurities, and thence transferred to a third still smaller vat, in which the evaporation is finished and the common salt formed. When crystals of Epsom salt begin to deposite, the mother water is drawn off, and kept, under the name of Bitterns, for the Epsom salt and magnesia works.

The season for making salt is over by the end of October, and the large vat is then filled with brine, which the sun and high winds of the two succeeding months concentrate to the strength of pickle. This is drawn off into the pickle vat, in which it remains till spring, when it is transferred to the third vat and evaporated to obtain the common salt. During, however, the extreme cold weather, a crystalline deposite is formed, consisting chiefly of sulphate of soda, which is taken out with iron rakes having strainers attached to them, and then purified for sale by recrystallization. The best formed crystals are sometimes dried and sold in their impure state.

The bitterns consists chiefly of sulphate of magnesia and hydrochlorates of magnesia and lime, of which the latter two do not easily crystallize. It is evaporated slowly, and the Epsom salt may, with proper care and washing be obtained very pure. When evaporated too hastily it is mixed with hydrochlorate of magnesia, a very bitter and deliquescent salt.

To obtain the magnesia the bitterns is diluted to a certain standard (upon the strength of which the degree of the firmness and compactness of the magnesia is said to depend) and mixed with a solution of pearl ash. The precipitate is repeatedly washed in water, which is at first hot and gradually cooled, till it comes off quite tasteless. The box in which it is washed is twenty-five feet in length by twenty feet in breadth, and three in depth, and has a strainer of canvass for a bottom. When sufficiently pure, the magnesia is allowed to thicken, and is then poured into square moulds placed on canvass strainers. When these are full, and the magnesia has obtained the proper consistence, the moulds are lifted off, and the

next day the magnesia is removed into the drying oven, where it is kept for forty-eight hours, at a temperature of 190°, then taken out, scraped, and packed up for sale.

In attempting to investigate the rationale of these processes, I shall assume as correct the experiments of Dr. Marcet, published in the Philosophical Transactions for 1819. This excellent chemist obtained from five hundred grains of sea water from the middle of the North Atlantic ocean, having the specific gravity of 1.02886 the following precipitates :

	grs.			grs.
Chloride of Silver, -	42	equivalent to	Chlorine, - -	10.356
Phosphate of Magnesia, -	2.7		Magnesia, - -	1.125
Sulphate of Barytes, - -	3.85		Sulphuric Acid, -	1.305
Oxalate of Lime, - -	8		Lime, - -	.35
			Sodium, - -	6.037

The state in which these elements exist in sea water is involved in much obscurity. According to the temperature employed in the evaporation, we procure from it either sulphate of lime, sulphate of magnesia, or sulphate of soda. It is therefore evident that a change of temperature is sufficient to disarrange the combinations that usually obtain.

If we suppose the sulphuric acid to exist in combination with soda, the following may be considered as the composition of 1000 grains of sea water.

Sulphate of Soda, - - -	4.698 grs.
Hydrochlorate of Magnesia, - -	6.4125
——————— Lime, - - -	1.625
Chloride of Sodium, - - -	26.27

If it be combined with magnesia the following arrangement may be considered as obtaining :

Sulphate of Magnesia, - -	3.915 grs.
Hydrochlorate of do. - - -	2.69325
——————— Lime, - -	1.625
Chloride of Sodium, - - -	30.185

The latter formula agrees better than the former with the medium proportion of salt, (which is about three per cent.) in sea water. If sulphate of soda be the salt naturally in solution, I know of no law to determine the formation of sulphate of magnesia. If the latter salt be the one ready formed in sea water, the production of sulphate of soda during intense cold will be in agreement with two known laws. One of these is, that solutions of sulphate of magnesia and chloride of sodium decompose each other when exposed to a freezing temperature, as first remarked by Gren. The other is the very remarkable law of solubility of sulphate of soda. At 32° F. 5.02 parts of the dry salt are soluble in 100 parts of water, and 50.65 parts at 102°; whereas the solubility of chloride of sodium is scarcely affected by the temperature. The pickle in which the Glauber's salt forms, is a nearly saturated solution of salt, and remains liquid at zero. At this temperature almost the whole of the sulphate of soda will crystallize. It is therefore probable, that the sulphuric acid exists in sea water in combination with magnesia.

The formation of Glauber's salt cannot be advantageous to the manufacturer. It lessens the production of common salt about thirteen per cent.; and though the same quantity of magnesia can be obtained from the bitterns, it will not yield Epsom salt.

It is much to be wished that accurate observations should be made on the spot, of the composition of the bitterns, and the various phenomena occurring at a salt works. Much advantage would result to the manufacturer in point of economy, and new light be thrown upon an obscure and intricate subject.

Remarks on the Common Hydrometer, with a description of a new method of graduating that instrument. By DANIEL B. SMITH.—*Read October*, 1825.

The most exact method of ascertaining the specific gravities of fluids is undoubtedly, to weigh carefully, equal bulks of them. This mode however is troublesome, and not always practicable. Advantage has therefore been taken of the law of hydrostatics, that a floating body will displace a quantity, which is inversely as the weight, of the fluid in which it swims. The hydrometer is constructed upon this principle—being a bulb with a long stem, so loaded that the two extremes of the stem will mark the lightest and heaviest fluids in which the instrument is to be tried. When proper care is taken in its construction the results which it gives are perfectly correct, although not capable of being observed with as much exactness as those of a good balance. The hydrometer in common use (that of Baumé) is of two kinds, one for spirits and the other for saline and acid solutions. The former is graduated by making the point to which it sinks in distilled water, ten degrees of the scale, and that to which it sinks in a solution of one part, by weight, of dry muriate of soda in nine parts of water, zero; the instrument being so loaded that zero is at the lower end of the stem. In the latter the instrument is loaded so as to sink to the top of the stem in distilled water, which point is made zero; while the point to which it sinks in a solution of fifteen parts, by weight, of dry muriate of soda in eighty-five parts of distilled water, is marked fifteen degrees. The instruments are graduated by marking off equal divisions of these degrees.

respectively upon the stems. It is an objection to this mode of graduation, that by taking as starting points so small a part of the scale, the error of observation, if any, is multiplied in the higher numbers. Another objection, which applies equally to all the hydrometers in common use is, that the scales are altogether arbitrary—that they will not compare with each other, and are not intelligible to the general student.

To avoid these inconveniences it is proposed to construct an instrument, of which one hundred degrees shall represent an increase or decrease of two-tenths of specific gravity, water being zero, and the scale equally divided. As the depth to which it will sink, or the quantity of fluid which it will displace is in the inverse ratio of the specific gravity of the fluid, it is easy to ascertain the precise value of each degree of the scale in terms of specific gravity. Taking the specific gravity of water as 1. and that indicated by one hundred degrees of the instrument at .8, let it be required to find the specific gravity (S) indicated by any other degree (n) of the scale. Put x = the bulk of water displaced by the instrument, y = the bulk of each degree of the stem, and $x+100y$ = the bulk of liquid of the specific gravity of .8, which will be displaced. Then as $1. : .8 :: x + 100y : x$. $\therefore x = 400y$; and as $1 : S :: x + ny : x = \frac{nSy}{1-S}$, whence $S = \frac{400}{400+n}$. In the hydrometer for liquids heavier than water, in which one hundred degrees represents a specific gravity of 1.2, this formula becomes $S = \frac{600}{600-n}$, and $x = 600y$. From these data the numbers in table No. II. are calculated.

It is obvious that the scale here described is applicable to all the purposes for which the hydrometer can be used; that it is easily convertible into terms of specific gravity, and that great advantages would result from the general use of this or one similar. Any part, high or low, of the scale, can be adapted to an instrument with perfect accuracy; and its range can be extended so as to include the lightest and heaviest liquids, and the value of tenths and hundredths of degrees ascertained and observed.

A disadvantage of this and the common hydrometer is, that if the degrees of the stem be sufficiently large for accurate observation, the range of the instrument becomes very limited or the stem inconveniently long. In Nicholson's, which is a very correct but somewhat inconvenient hydrometer, this defect is obviated by surmounting the stem with a flat dish and sinking it with weights to a constant depth. In Aikin's and Sike's, weights are added to that part of the instrument which is immersed in the fluid, and the strength above or below a certain standard, represented by each weight, is measured on the scale. In this instrument a calculation is necessary of the value of each degree of the scale for every weight that is used, as both the weight and bulk of the hydrometer are altered thereby. There are none of them as simple in principle and as convenient in practice as the instrument now proposed, in which we can attain the same object (of shortening the stem and preserving its range) without altering the principle of the graduation.

Let the stem be of solid metal, drawn out to a perfectly uniform diameter, and the pear-shaped appendage to

the bulb be loaded with an extra weight equal to eighty degrees of the stem. Let then the length of stem equal to twenty degrees be ascertained by experiment, and the stem cut off a little beyond that mark. This length can be measured off on an exactly similar rod of metal, and circular discs of the same density and weight, and pierced like the weights of Aikin's hydrometer, easily formed. If we take four of these, attach them to the summit of the stem and lighten the bulb till the instrument again sinks to the same mark in the same fluid, it will evidently give the same measurements as high as the twentieth degree, as if the weights were drawn out to the diameter of the stem and graduated to one hundred degrees. Let then one of the weights be taken from the top and attached below the ball of the instrument, and it will measure from twenty to forty degrees; if two are shifted it will measure from forty to sixty; from sixty to eighty, if three are shifted; and from eighty to one hundred, when all are immersed in the liquid.

The advantages of this arrangement are obvious; its principles are applicable to any number of degrees as well as to one hundred, and whatever part of the scale be taken for the range of the instrument.

The use of the hydrometer is much limited by the unequal expansion of different fluids by heat. It must always be used at the same temperature, unless the law by which the fluid expands be known. The various mixtures of alcohol and water, are the only liquids which have been subjected to experiments sufficiently multiplied to enable us to apply the requisite correction for heat.

The table No. I. is calculated from the very copious tables prepared by direction of the British Excise, and published in the Philosophical Transactions, for 1794. It exhibits the per centage of alcohol of .825 specific gravity, indicated by each degree of the hydrometer for every five degrees of temperature, from 30° to 80° of Fahrenheit. The usefulness of this table, will, it is believed, compensate for its length. Its accuracy is affected by the expansion of the instrument itself, which therefore requires to be investigated. The mean of the best experiments gives .00057 as the expansion in bulk of brass in passing from 32° to 212°. In graduating the hydrometer, the mean temperature of 55° is to be employed; so that the expansion is to be ascertained for twenty-five degrees. This will be .003167, or less than one-thirtieth of a degree; a quantity imperceptible to the eye. Of the other materials used in the construction of hydrometers, glass and platinum expand about half as much as brass, and gold and silver nearly in the same ratio.

TABLE NO. I.

The quantity of Alcohol of the specific gravity of .825 contained in 100 parts of Liquid for every degree of the Hydrometer, and every 5 degrees of Fahrenheit's Thermometer.

	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°
90											99.69
89										99.94	99.17
88										99.42	98.65
87									99.66	98.90	98.12
86								99.87	99.14	98.36	97.58
85								99.35	98.59	97.83	97.04
84							99.55	98.81	98.05	97.28	96.48
83						99.77	99.02	98.27	97.50	96.72	95.91
82					99.98	99.23	98.48	97.72	96.94	96.15	95.33
81					99.44	98.68	97.93	97.17	96.38	95.58	94.75
80				99.63	98.90	98.13	97.38	96.60	95.82	94.99	94.15
79			99.80	99.08	98.33	97.57	96.81	96.03	95.23	94.40	93.55
78		99.97	99.26	98.54	97.79	97.	96.24	95.45	94.64	93.80	92.94
77		99.43	98.70	97.98	97.22	96.43	95.65	94.87	94.04	93.19	92.32
76	99.58	98.88	98.14	97.41	96.64	95.83	95.06	94.26	93.42	92.56	91.68
75	99.03	98.32	97.57	96.82	96 05	95.23	94.45	93.64	92.79	91.93	91.04
74	98.47	97.76	96.99	96.23	95.45	94.62	93.83	93.	92.14	91.27	90.38
73	97.90	97.19	96.40	95.63	94.84	93.99	93.19	92-36	91.49	90.61	89.71
72	97.32	96.53	95.80	95.01	94.21	93.36	92.55	91.71	90.83	89.94	89.04
71	96.72	95.85	95.18	94.39	93.58	92.73	91.90	91.05	90.17	89.27	88.36
70	96.12	95.30	94 56	93.76	92.94	92.08	91.24	90.38	89.49	88.59	87.68
69	95.49	94.74	93.94	93.12	92.29	91.42	90.57	89.70	88.80	87.90	86.99
68	94.87	94.08	93.29	92.47	91.62	90.75	89.89	89.02	88.11	87.21	86.29
67	94.22	93.42	92.63	91.80	90.94	90.07	89.20	88.33	87.42	86.51	85.58
66	93.57	92.76	91.95	91.12	90.26	89.38	88.51	87.63	86.71	85.80	84.86
65	92.91	92.09	91.28	90.43	89.57	88.69	87.80	86.92	86.	85.08	84.13
64	92.25	91.42	90.59	89.72	88.86	87.97	87.08	86.20	85.27	84.35	83.40
63	91.58	90.75	89.88	89.	88.16	87.25	86.36	85.47	84.54	83.61	82.66
62	90.90	90.03	89.16	88.29	87.46	86.52	85.63	84.72	83.79	82.86	81.91
61	90.21	89.31	88.44	87.57	86.71	85 78	84.89	83.97	83.04	82.10	81.15
60	89.48	88.58	87.71	86.83	85.95	85.03	84.14	83.21	82.27	81.33	80.38
59	88.74	87.83	86.98	86.09	85.20	84.28	83.37	82.45	81.50	80.55	79.60
58	87.99	87.08	86.22	85.34	84.44	83.51	82.59	81.67	80.72	79.76	78.79
57	87.24	86.33	85.45	84.58	83.67	82.73	81.81	80.89	79.93	78.96	77.97
56	86.47	85.57	84.69	83.79	82.89	81.94	81.03	80.09	79.13	78.15	77.15
55	85.69	84.79	83.91	82.99	82.09	81.15	80.23	79.29	78.32	77.34	76.33
54	84.90	84.	83.12	82.20	81.29	80.35	79.43	78.40	77.49	76.51	75.51
53	84.10	83.20	82.31	81.39	80.47	79.54	78.60	77.61	76.65	75.67	74.68
52	83.30	82.41	81.51	80.58	79 66	78.72	77.77	76.74	75.82	74.84	73.84
51	82.49	81.55	80.69	79.77	78.84	77.89	76.95	75.96	74.99	74.	73.
50	81.66	80.76	79.85	78.93	77.99	77.04	76.03	75.07	74.11	73.12	72.12
49	80.83	79.93	79.01	78.08	77.14	76.18	75.13	74.18	73.23	72.23	71.24

TABLE NO. I.—CONTINUED.

	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°
48	79.99	79.08	78.15	77.22	76.28	75 32	74.30	73.35	72.37	71.36	70.33
47	79.14	78.22	77.28	76.35	75.41	74.46	73.48	72.49	71.50	70.48	69.42
46	78.27	77.36	76.41	75.47	74.53	73.56	72.58	71.58	70.58	69.55	68.49
45	77.40	76.48	75.53	74.59	73.65	72.66	71.67	70 67	69.66	68.61	67.55
44	76.51	75.60	74.63	73.69	72.75	71 75	70.74	69.75	68.72	67.66	66.59
43	75.63	74.70	73.72	72.78	71.84	70.84	69.80	68.82	67.78	66 70	65.62
42	74.71	73.78	72.81	71.85	70.89	69.86	68.84	67.89	66.80	65.74	64.59
41	73.79	72 85	71.89	70.92	69.94	68.88	67.87	66.85	65.83	64.77	63.56
40	72.85	71.90	70.93	69.95	68.96	67.91	66 89	65.91	64.85	63.77	62.77
39	71.90	70.93	69.97	68.97	67 97	66.94	65.90	64.87	63.85	62.76	61.68
38	70.92	69.95	68.97	67.97	66.96	65.94	64.90	63.86	62.84	61.72	60.64
37	69 93	68.96	67.97	66.96	65.95	64.93	63.90	62.84	61.77	60.68	59.59
36	68.92	67.95	66.95	65 93	64.91	63.89	62.86	61.80	60.72	59.63	58.54
35	67.90	66.92	65.92	64.90	63.87	62.84	61.81	60.75	59.67	58.58	57.48
34	66.86	65.86	64.88	63.84	62.80	61.76	60 72	59.66	58.58	57 49	56.38
33	65 82	64.81	63.82	62 78	61.73	60.68	59.63	58.56	57.49	56.39	55.28
32	64.75	63.71	62.74	61.69	60.63	59.58	58.52	57.45	56.37	55.15	54.12
31	63.66	62.61	61.65	60.59	59.53	58.47	57.40	56.33	55.25	54.11	52.96
30	62.56	61.55	60.54	59.47	58.40	57.33	56.26	55.15	54.04	52.91	51.79
29	61.44	60.44	59.42	58.34	57.26	56.18	55.10	53.97	52.83	51.70	50.58
28	60.31	59.29	58.26	57.16	56.07	54.97	53.87	52.74	51.60	50.46	49.32
27	59.16	58.10	57.05	55.97	54.88	53.76	52 63	51.50	50.37	49.21	48.01
26	57.96	56.89	55.81	54.75	53.60	52.48	51.35	50 20	49.06	47.89	46.70
25	56.72	55.65	54.55	53.43	52.31	51.19	50.06	48.90	47.74	46.56	45.38
24	55.45	54.32	53.25	52.11	50.98	49.84	48.68	47.53	46.37	45.17	44.
23	54.15	53.03	51.91	50.78	49.65	48.48	47.30	46.15	44.99	43.79	42.59
22	52.75	51.70	50.54	49.36	48.21	47.02	45.85	44.69	43.51	42.33	41.27
21	51.34	50 31	49.15	47.94	46.76	45.56	44.40	43 23	42.02	40.82	39.58
20	49.92	48.84	47.63	46.44	45.25	44.04	42.87	41.68	40.46	39.29	37.99
19	48.50	47.26	46.09	44.88	43.67	42.46	41.27	40.04	38.83	37.58	36.35
18	46.86	45.65	44 46	43.21	42.01	40.79	39.55	38.30	37.09	35.86	34.62
17	45.21	43.99	42.76	41.47	40.26	39.01	37.77	36.53	35.29	34.05	32.80
16	43.44	42.20	40.90	39.63	38.38	37.13	35.89	34.59	33.40	32.16	30.90
15	41.54	40.24	38.97	37.65	36.37	35.10	33.87	32 59	31.38	30.18	28.93
14	39.38	38.11	36.83	35.48	34.19	32.93	31.71	30.47	29.28	28.10	26.87
13	37.11	35.80	34.48	33.13	31 83	30.62	29.43	28.25	27.10	25.97	24.80
12	34.49	33.14	31.86	30.52	29.30	28.14	27.02	25.92	24 83	23.73	22.69
11	31.44	30.08	28.99	27.74	26.59	25.53	24.52	23.51	22.51	21.50	20.57
10	27.99	26.84	25.88	24.80	23.84	22.89	21 99	21.09	21.07	19.24	18.27
9	24.30	23.40	22.60	21.82	21.07	20.24	19.46	18.64	17.82	16.97	15.97
8	20.53	20.03	19.50	18.90	18.29	17.61	16.92	16.23	15.48	14.72	13.87
7	17.05	16.80	16.49	16.07	15.64	15.05	14.48	13.85	13.18	12.15	11.73
6	13.91	13.84	13.66	13.38	13 03	12.59	12.12	11.56	10.97	10.43	9.63
5	11.18	11.15	11.17	10.18	10.63	10 26	9.85	9.37	8.83	8.25	7.58
4	8.49	8.68	8.65	8.55	8.34	8.04	7.69	7.27	6.76	6.23	5.63
3	6.33	6.42	6.44	6.39	6.13	5.94	5.63	5.24	4.52	4.34	3.72
2	4.20	4.35	4.38	4.35	4.19	3.97	3.68	3.32	2.89	2.39	1.87
1	2.33	2.43	2.45	2.43	2.28	2 08	1.81	1.44	1.10	.87	.74

[*To be continued.*]

TO THE COLLEGE OF PHARMACY.

[*Read October*, 1825.]

I beg leave to furnish an alteration in the recipe which I sent to you some time past, for the preparation of Syrup of Ginger.

Ginger bruised sufficient to occupy the space of one gallon; alcohol one and a half gallon—shake frequently for one month, and then filter as it may be needed for use. Of this saturated tincture, take from two to four gills, and add to each gallon of simple syrup—evaporate the alcohol and the syrup will be transparent.

I change the dilute spirit for alcohol, because a weak spirit will take up so much of the mucilage of the ginger as to make the syrup cloudy. The alcohol does not take up that mucilage, and therefore should always be employed in making tinctures for the preparation of syrups which we desire to have transparent.

Very respectfully,

Jos: Bringhurst.

Wilmington, Del.

ALTERATIONS,

ADOPTED IN THE LONDON PHARMACOPŒIA, OF 1824.

MATERIA MEDICA.

NEW ARTICLES.

Acidum Aceticum Fortius,

Distilled from wood, sp. gr. 1.046; 100 grains saturate 87 grains of crystallized sub-carbonate of soda.

BISMUTHUM.
KRAMERIÆ RADIX.
LACTUCA.
STRAMONII SEMINA ET FOLIA.
TIGLII OLEUM.
COLCHICI SEMINA.
CONII SEMINA.
DIGITALIS SEMINA.

—

ARTICLES RESTORED.

ANTIMONII VITRUM.
CUBEBÆ BACCA.
HELENII RADIX.

—

PRÆPARATA ET COMPOSITA.

—

ALTERED FORMULÆ.

BENZOIC ACID.

The acid is obtained by sublimation as directed in the old Pharmacopœias.

—

ACETATE OF POTASSA.

Take of sub-carbonate of potassa, a pound,
Strong acetic acid, two pints,
Boiling distilled water, two pints:

Having first mixed the acid and water, add it to the sub-carbonate of potassa, till it ceases to excite effervescence and filter; evaporate the liquor in a water bath, until ebullition ceases. Then expose it to a heat gradually increased, and again evaporate until a pellicle ap-

pears on the surface; remove this pellicle and dry it on bibulous paper. Continue the evaporation of the liquor, and remove and dry the pellicles in the same manner.

—

CARBONATE OF POTASSA.

—

CARBONATE OF SODA.

—

The process of the Edinburgh college, for preparing these salts, by passing a stream of carbonic acid gas through solutions of the sub-carbonates, is adopted.

—

LIME WATER,

Is directed to be made with cold instead of hot water.

—

TARTARISED ANTIMONY.

Take of glass of antimony, very finely powdered,
Supertartrate of potassa, in powder, of each a pound,
Boiling distilled water, a gallon;

Accurately mix the glass of antimony and the supertartrate of potassa, and add them by degrees to the boiling distilled water, constantly stirring it with a spatula; boil for a quarter of an hour and set it by. Filter the solution when cold, and evaporate the filtered liquor so that crystals may form.

—

WINE OF TARTARISED ANTIMONY.

Take of tartarised antimony, one scruple,
Boiling distilled water, eight fluid-ounces,
Rectified spirit, two fluid-ounces;

Dissolve the tartarised antimony in the boiling distilled water; then add the spirit to the filtered liquor.

Wine of Iron.

Take of iron a drachm,
Supertartrate of potassa in powder, six drachms,
Distilled water, two pints, or a sufficient quantity,
Proof spirit, twenty fluid-ounces:

Rub the iron and the supertartrate of potassa together, and expose the mixture to the air for six weeks, in a shallow glass vessel, with one fluid-ounce of the water, stirring it daily with a spatula, and occasionally adding distilled water, so that it may be always moist. Then dry by a gentle heat, reduce it to powder, and mix it with thirty fluid-ounces of the distilled water. Filter the solution, and when filtered, add the spirit.

Submuriate of Mercury.

Take of purified mercury, by weight, four pounds,
Sulphuric acid, by weight, thirty ounces,
Muriate of soda, a pound and a half,
Muriate of ammonia eight ounces;

Boil two pounds of the mercury with the sulphuric acid in a glass vessel, until the sulphate of mercury is dry. When it has cooled, rub it with two pounds of the mercury in an earthenware mortar till they are well mixed. Then add the muriate of soda, and rub them together until globules are no longer visible. Then sublime. Reduce the sublimate to a very fine powder, pass it through a sieve, and mix it well with the muriate of ammonia previously dissolved in a gallon of boiling distilled water. Set it by, that the powder may subside. Pour off the liquor and wash the powder frequently with

boiling distilled water, until solution of ammonia, dropped in, produces no precipitate. Lastly, reduce it to a very fine powder in the manner directed for the preparation of the chalk.

—

Acetate of Lead.

A pint of strong acetic acid is substituted for a gallon and a half of distilled vinegar as formerly used.

—

Oxide of Zinc.

Take of sulphate of zinc, a pound,
Solution of ammonia, a pint, or a sufficient quantity,
Distilled water a pint;

Dissolve the sulphate of zinc in the distilled water, and add as much of the solution of ammonia as will suffice for the entire precipitation of the oxide of zinc. Having poured off the clear liquor, wash the powder repeatedly with distilled water, and dry it on a sand-bath.

—

Cinnamon Water.

—

Peppermint Water.

—

Spearmint Water.

—

Pennyroyal Water.

—

These distilled waters are directed to be distilled from the bark or herbs, as formerly, or from the essential oil and water; 5 scruples of oil of cinnamon, and 3 drachms, by weight, of the oils of peppermint, spearmint and pen-

nyroyal, are substituted for the quantity of bark or herbs, which yield a gallon of distilled water.

—

INFUSION OF CALUMBA,

Is doubled in strength.

—

COMPOUND EXTRACT OF COLOCYNTH.

Diluted alcohol is substituted for water, and 3 drachms of white soap added to the formula of the old Pharmacopœia.

—

SPIRIT OF CINNAMON.

Five scruples, by weight, of the essential oil may be used instead of a pound of the bark.

—

SPIRIT OF PEPPERMINT.

—

SPIRIT OF SPEARMINT.

—

SPIRIT OF PENNYROYAL.

—

SPIRIT OF ROSEMARY.

—

Instead of the dried herbs, 6½ scruples of the oil of peppermint and spearmint, 7 scruples of the oil of pennyroyal, and 1 oz. of the oil of rosemary may be used for obtaining a gallon of the respective spirit.

—

TINCTURE OF MYRRH.

—

TINCTURE OF GINGER.

—

Rectified spirit is directed in place of proof spirit.

—

WINE OF ALOES,

Is directed to be made with four pints of water and four pints of proof spirit, in place of two pints of the latter, and six pints of wine.

—

WINE OF IPECACUANHA.

Take of ipecacuanha root bruised, two ounces,
Proof spirit, twelve fluid-ounces.
Distilled water, twenty fluid-ounces;
Macerate for fourteen days, and strain.

—

WINE OF OPIUM.

The same proportions of proof spirit and water as in the above preparation are substituted for the wine formerly ordered.

—

WINE OF WHITE HELLEBORE.

Take of white hellebore root sliced, eight ounces,
Proof spirit, a pint,
Distilled water, a pint and a half;
Macerate for fourteen days, and strain.

—

CONFECTION OF OPIUM.

Two drachms of gum tragacanth are added to the old formula.

—

COMPOUND PILLS OF GAMBOGE.

Take of gamboge in powder, a drachm,
Extract of spiked aloe, in powder, a drachm and half,

Ginger in powder, half a drachm,
Hard soap, two drachms;

Mix the powders together; then, having added the soap, beat the whole together until incorporated.

—

COMPOUND PILLS OF CALOMEL.

Half a drachm of alcohol in place of the mucilage of gum arabic.

—

CUMIN PLASTER.

An ounce and a half each of olive oil and of water, are added to the old formula.

—

PLASTER OF SPANISH FLIES.

The quantity of lard is reduced from a pound to half a pound.

—

PLASTER OF OPIUM.

Half a pint of water is added; and the plaster boiled till the water is evaporated.

—

COMPOUND PLASTER OF PITCH.

Two fluid-ounces each, of olive oil and water, are added to the old formula.

—

NEW PREPARATIONS.

TARTARIC ACID.

Take of supertartrate of potassa two pounds and a half,
Boiling distilled water, three gallons,
Prepared chalk a pound,
Sulphuric acid a pound;

Boil the supertartrate of potassa with two gallons of the distilled water, and add the prepared chalk by degrees, until it ceases to cause effervescence. Set by the mixture, that the tartrate of lime may subside; pour off the liquor and wash the tartrate of lime frequently with distilled water until it becomes tasteless. Then pour upon it the sulphuric acid diluted with a gallon of boiling distilled water, and set them by for twenty-four hours, occasionally stirring them. Strain the liquor and then evaporate it by a water bath, so that crystals may form.

—

Sub-Nitrate of Bismuth.

Take of Bismuth, an ounce,
Nitric acid, a fluid-ounce and a half,
Distilled water, three pints;

Mix six fluid-drachms of the distilled water with the nitric acid, and dissolve the bismuth in this mixture; then filter. Mix the remaining water with the filtered solution, and set it by that the powder may subside. Then having poured off the supernatant liquor, wash the subnitrate of bismuth with distilled water and dry it, wrapped in bibulous paper, in a gentle heat.

—

Extract of Lettuce.

Prepared from the fresh leaves in the same manner as the extracts of hemlock and henbane.

—

Extract of Thorn Apple.

Take of thorn apple seeds a pound,
Boiling water a gallon;

Macerate for four hours in a covered vessel near the fire; then take out the seeds and bruise them in a stone

mortar; having bruised them return them into the liquor. Then boil down to four pints and strain the liquor while hot. Lastly, evaporate until it has a proper consistence.

—

Ammoniated Spirit of Meadow Saffron.

Take of meadow saffron seeds bruised, two ounces,
Aromatic spirit of ammonia, a pint;
Macerate for fourteen days, and strain.

—

Wine of Meadow Saffron.

Take of meadow saffron root, fresh and sliced, a pound,
Proof spirit, four fluid-ounces,
Distilled water, eight fluid-ounces;
Macerate for fourteen days, and strain.

—

Syrup of Sarsaparilla.

Take of sarsaparilla root sliced, a pound,
Boiling water, a gallon,
Refined sugar, a pound;
Macerate the root in the water for twenty-four hours; then boil down to four pints, and strain the liquor while hot; then add the sugar, and evaporate to a proper consistency.

—

Confection of Black Pepper.

Take of black pepper,
Elecampane root, each a pound,
Fennel seeds, three pounds,
Honey, Refined sugar, each two pounds;
Rub the dry ingredients together, into a very fine powder; then having added the honey, rub them till the whole is incorporated.

SELECTED PAPERS.

On the Production and Nature of Oil of Wine, (Oleum Æthereum of the London Pharmacopœia.) By Mr. H. HENNELL, *Chemical Operator at Apothecaries Hall.*

Mr. R. PHILLIPS, in his translation of the London Pharmacopœia, appearing to doubt the existence of oil of wine, as a distinct substance, I was induced carefully to repeat the process we usually adopt in our laboratories for obtaining it.

Half a gallon of rectified spirit of wine (sp. gr. 830,) was mixed with an equal bulk of sulphuric acid, and distilled in a glass retort; the products were ether, water, sulphurous acid, and about four ounces of a yellow fluid floating upon the water, which, when separated and washed with solution of carbonate of potash as long as there was any trace of sulphurous acid, was a solution of true oil of wine in ether. The ether may be removed, either by spontaneous evaporation, or it may be distilled off with a very gentle heat. The oil thus obtained, and which amounts to about two ounces, is a yellow fluid, resembling, in appearance, oil of lavender or peppermint; perhaps rather more viscid. It has a specific gravity of 1.05. After being kept a few months, it becomes more viscid, and a number of prismatic crystals form in it, which, in many of their characters, very much resemble Napthaline; they are soluble in ether and alcohol, and

crystallize from both those solvents in very slender prisms; they melt with a very slight heat, and sublime unaltered; in warm sulphuric acid they dissolve, forming a pink solution; they dissolve in cold nitric acid, forming a deep red solution, similar to that of morphia in nitric acid; heat destroys this colour instantly; and the solution, after boiling, on being diluted with water, throws down a white flaky precipitate. The crystals are insoluble in muriatic and in acetic acids, and in the caustic alkalies, hot or cold.

The oil is soluble in ether and alcohol, but insoluble in water; distilled with water, it passes over like the greater number of the essential oils, without having undergone any alteration; but when a portion was attempted to be distilled alone, the greater part came over in the form of a thick oily matter, a considerable quantity of sulphurous acid was formed, and charcoal and a little sulphuric acid were left in the retort. With a view to get rid of a portion of acid, which the carbonate of potash had apparently not removed, some of the oil was heated in a solution of caustic potash; it diminished considerably in bulk, and became much more viscid than before: it was separated from the potash solution by the action of ether, and when the ether was distilled off, there remained a yellow oil, with very little fluidity, which evaporated entirely when heated, without any appearance of decomposition or evolution of sulphurous acid, and which, in a few days, concreted into a mass of prismatic crystals, having all the characters of those before described. The potash solution, evaporated to dryness, afforded a residue somewhat like acetate of potassa in appearance; upon heating a few grains of it, it took

fire, and burnt with a flame resembling that of alcohol, and sulphate of potash remained; it dissolved in hot alcohol, and the solution deposited, on cooling, crystals in the form of pearly scales; in short, it had those characteristics which have been ascribed to sulphovinate of potassa; I therefore consider *oil of wine* as a compound of sulphovinic acid, and the peculiar crystallizable oil which I have described.

There are two facts which render it probable that oil of wine, when obtained, as in the above process, from alcohol and sulphuric acid, is a product of the decomposition of sulphovinic acid; namely—first, that when alcohol and sulphuric acid are mixed in equal bulks, sulphovinic acid is formed in great abundance; nearly five ounces of sulphate of lead were obtained from the sulphovinate of that metal, formed by neutralizing the acid resulting from a mixture of four ounces of alcohol with an equal bulk of sulphuric acid, the mixture having been allowed to become cold before it was saturated—and secondly, oil of wine, or a fluid exactly resembling it, is obtained when any of the sulphovinates are carefully decomposed by heat.

Dr. Grant on the Ova of Sponge.—When we cut a thin piece off the surface of a living sponge, and look down through one of its pores with the reflecting microscope, we perceive immediately beneath the projecting spicula which defend the pore, a very delicate net work of gelatinous threads thrown over the entrance of the tube. This piece of structure is so fine, as to be per-

fectly invisible to the naked eye; it consists of five or six threads, which pass in from the sides of the tube to be connected with a central mesh, so that there are six or seven meshes thus formed; and while this soft apparatus is beautifully defended by the protecting spicula of the pore, it serves still farther to guard the interior of the animal from the smallest particles of sand, or the minutest visible animalcules. Along the whole interior of the pores and tubes, there is a thin gelatinous matter enveloping every fibre, and filling all the interstices between the fasciculi. This gelatinous matter is transparent and colourless, and so little consistent, that it runs down like the white of an egg, when the sponge is first torn from the rock, and suspended between the fingers; the microscope detects no trace of organization in it; by filling up the inequalities of the sides of the tubes, it smoothens these passages for the small streams. Every part of the gelatinous matter is covered with minute granular bodies, which are distinctly seen in every species of sponge by the weakest magnifier of the microscope. These granular bodies are represented in the plates of Donati, of a spherical form, adhering to the quadriradial fibres of what he has named the Alcyonium primum Dioscoridis. They are quite invisible to the naked eye; they escape along with the gelatinous matter, and compose the greater part of it; they are connected with each other by the gelatinous matter, and probably, through the same medium, have some connexion with the spicula, along which they are placed. No part in the organization of the sponge is more constant and obvious, than these granular transparent bodies lining the interior of every canal, from the pores to the fecal orifices. Their form is not quite sphe-

rical, but somewhat lengthened, or ovoidal, and they are always attached by one extremity to the gelatinous matter, while their opposite end is seen to project, free into the cavity of the canals. Through the greatest magnifier of the microscope, no difference can be detected in their forms in different species of sponge; they all appear to be enlarged and rounded at their free projecting extremity; and when watched with attention, we distinctly perceive, that they possess some power of spontaneous motion, both when in connexion with sides of the canals, and when lying isolated at the bottom of water. The ova of the sponge, are quite visible to the naked eye, and are seen disseminated through the whole texture of the animal in the winter season. They are bodies of a yellow colour, somewhat translucent, pear-shaped, tapering, more or less, at their narrow end, in different species; their whole outer surface is covered with delicate projecting ciliæ; and when viewed through the microscope, in connexion with the parent, we see that the rapid vibration of these ciliæ produces a distinct current in the water immediately around them, flowing always from their rounded free end, towards their tapering fixed extremity; thus assisting the small granular bodies in producing the currents of the sponge, during the period of their attachment to the body. They separate from the canals, and are propelled through the fecal orifices early in spring. None of these ova are seen in the sponge in summer, though we can detect no difference in the velocity of the currents at that period. For some time after they are propelled from the interior of the sponge, they swim about by means of the ciliæ on their surface; and exhibit all those extraordinary phenomena of spontaneous

motion which Cavolini, nearly half a century ago, discovered in the ova of the Gorgonia and Madrepore. They at length fix themselves, like the ova alluded to, on a spot favourable for their growth; they lose entirely their original form, and become a flat, transparent, circular film, through which horny fibres shoot; they soon spread and assume a form, somewhat similar to that of the parent.

Salts of Strontian and Barytes.—Moretti finds that strontian and barytic earths have a stronger affinity for arsenic than for sulphuric acid; that the succinates and arseniates of strontian are rather easily soluble, while those of baryta are insoluble—a character which affords a ready means of distinguishing from each other, two earths so nearly allied together.

Cooling of Glass.—Ballani finds, that after glass has been exposed to a great heat, on cooling, it never regains its original volume.

Iron Tanks.—Captain Hall says, "I once filled a tank with clear water, at Portsmouth harbour, and having carried it four times across the torrid zone, and round Cape Horn, brought it back again, more than two years afterwards, in the same tank, not in the least degree discoloured, and in all respects as good as when it was first taken up from the spring."

JOURNAL

OF THE

Philadelphia College of Pharmacy.

VOL. I. MAY, 1826. NO. II.

Remarks on the Common Hydrometer, &c.

(Concluded from page 16.)

TABLE NO. II.

The specific gravity corresponding with each degree of the hydrometer, from 1° to 200°, for liquids lighter, and for those heavier than water.

deg.			deg.			deg.		
1	.99751	1.00167	30	.93023	1.05263	59	.87146	1.10906
2	.99502	1.00334	31	.92807	1.05448	60	.86956	1.11111
3	.99256	1.00502	32	.92593	1.05634	61	.86768	1.11317
4	.99010	1.00671	33	.92379	1.05821	62	.86580	1.11524
5	.98765	1.00840	34	.92166	1.06007	63	.86393	1.11732
6	.98522	1.01010	35	.91954	1.06194	64	.86207	1.11940
7	.98280	1.01180	36	.91743	1.06383	65	.86021	1.12149
8	.98039	1.01351	37	.91533	1.06572	66	.85837	1.12359
9	.97799	1.01523	38	.91324	1.06761	67	.85653	1.12570
10	.97561	1.01695	39	.91116	1.06934	68	.85470	1.12782
11	.97324	1.01867	40	.90909	1.07143	69	.85288	1.12996
12	.97087	1.02041	41	.90703	1.07334	70	.85106	1.13208
13	.96851	1.02214	42	.90498	1.07527	71	.84926	1.13421
14	.96618	1.02389	43	.90293	1.07720	72	.84746	1.13636
15	.96385	1.02564	44	.90090	1.07913	73	.84567	1.13852
16	.96154	1.02740	45	.89888	1.08108	74	.84388	1.14068
17	.95923	1.02915	46	.89686	1.08303	75	.84210	1.14285
18	.95694	1.03092	47	.89485	1.08499	76	.84032	1.14504
19	.95465	1.03270	48	.89286	1.08696	77	.83857	1.14722
20	.95238	1.03448	49	.89087	1.08711	78	.83682	1.14942
21	.95012	1.03627	50	.88889	1 09091	79	.83507	1.15163
22	.94787	1.03806	51	.88691	1.09289	80	.83333	1.15384
23	.94563	1.03986	52	.88495	1.09489	81	.83160	1.15607
24	.94340	1.04167	53	.88303	1.09689	82	.82987	1.15830
25	.94118	1.04348	54	.88106	1.09890	83	.82816	1.16054
26	93897	1.04529	55	.87912	1.10092	84	.82645	1.16279
27	.93677	1.04712	56	.87719	1.10294	85	.82474	1.16548
28	.93458	1.04895	57	.87527	1.10495	86	.82304	1.16731
29	.93240	1.05078	58	.87336	1.10701	87	.82135	1.16959

TABLE NO. II.—CONTINUED.

deg.			deg.			deg.		
88	.81967	1.17187	126	.76045	1.26582	164	.70922	1.37614
89	.81800	1.17416	127	.75901	1.26850	165	.70796	1.37931
90	.81633	1.17647	128	.75757	1.27118	166	.70671	1.38249
91	.81466	1.17878	129	.75614	1.27388	167	.70546	1.38568
92	.81301	1.18110	130	.75472	1.27659	168	.70422	1.38888
93	.81136	1.18343	131	.75329	1.27932	169	.70299	1.39211
94	.80972	1.18577	132	.75188	1.28205	170	.70175	1.39535
95	.80808	1.18812	133	.75047	1.28480	171	.70052	1.39860
96	.80645	1.19047	134	.74906	1.28755	172	.69930	1.40187
97	.80483	1.19284	135	.74766	1.29032	173	.69808	1.40515
98	.80321	1.19522	136	.74627	1.29310	174	.69686	1.40845
99	.80161	1.19765	137	.74488	1.29589	175	.69565	1.41176
100	.8000	[illegible]000	138	.74349	1.29892	176	.69444	1.41509
101	.79843	1.20405	139	.74211	1.30152	177	.69324	1.41844
102	.79681	1.20482	140	.74074	1.30435	178	.69204	1.42180
103	.79523	1.20724	141	.73937	1.30719	179	.69084	1.42518
104	.79365	1.20967	142	.73801	1.31004	180	.68966	1.42857
105	.79208	1.21212	143	.73665	1.31291	181	.68846	1.43198
106	.79051	1.21457	144	.73529	1.31579	182	.68728	1.43541
107	.78895	1.21703	145	.73394	1.31868	183	.68611	1.43885
108	.78740	1.21951	146	.73260	1.32158	184	.68493	1.44231
109	.78585	1.22199	147	.73126	1.32450	185	.68376	1.44578
110	.78431	1.22449	148	.72992	1.32743	186	.68260	1.44987
111	.78278	1.22699	149	.72859	1.33037	187	.68143	1.45278
112	.78125	1.22951	150	.72727	1.33333	188	.68027	1.45679
113	.77959	1.23205	151	.72595	1.33630	189	.67912	1.45985
114	.77840	1.23457	152	.72464	1.33929	190	.67797	1.46341
115	.77669	1.23711	153	.72333	1.34228	191	.67682	1.46699
116	.77519	1.23967	154	.72202	1.34529	192	.67567	1.47058
117	.77369	1.24223	155	.72072	1.34831	193	.67453	1.47420
118	.77220	1.24481	156	.71942	1.35135	194	.67340	1.47785
119	.77071	1.24740	157	.71813	1.35440	195	.67225	1.48148
120	.76923	1.25000	158	.71684	1.35747	196	.67114	1.48515
121	.76775	1.25261	159	.71556	1.36054	197	.67002	1.48884
122	.76628	1.25523	160	.71428	1.36364	198	.66889	1.49254
123	.76482	1.25786	161	.71301	1.36674	199	.66778	1.49626
124	.76335	1.26050	162	.71174	1.36986	200	.66667	1.50000
125	.76190	1.26316	163	.71048	1.37300			

Value in degrees of the New Scale.

Sulphuric ether (Lowitz) .632,	233°—
Dr. Paris .739,	141+
Dublin .765,	123
Edinburg .758,	128

Spirit of nitrous ether,	71°
Aq. ammoniæ, Dublin .936,	27
London .960,	17
Muriatic acid 1.16,	83
Nitrous acid 1.50,	200
Sulphuric acid 1.848,	275

100 degrees of the brewer's saccharometer 1.100 sp. gr. 54½

38 degrees of Baumè's hydrometer for spirits, 83½

18 degrees of do. 24½

1 degree of the new scale equals 3 of Baumè; to reduce it to Baumè, divide by 3 and add 10.

72 degrees of Baumè's hydrometer for salts, equals 300°

24 degrees of do. 100

To reduce the new scale to Baumè, multiply by 12 and divide by 50.

Remarks upon the Preparation of the Black Oxide of Mercury. By Thomas Evans.—*Read Februray 28th*, 1826.

The black oxide or protoxide of mercury is the active constituent of the blue mass, or pilulæ hydrargyri of the dispensatories, the hydrargyrum cum creta, the blue mercurial ointments and plasters, and the black mercurial wash. In all these preparations, except the last, only a small portion of the quicksilver is really oxydized. By long trituration with viscid or fatty substances, the metal is divided into globules so very

minute as not to be discernible by the naked eye; yet they may readily be seen with a glass; or they may be rendered visible in the blue pill without a glass, by washing it in successive portions of clear water until the saccharine and farinaceous parts are removed. In like manner, if the mercurial ointment is melted by a gentle heat, and the supernatant oil decanted, a dark blue powder, and a considerable portion of quicksilver will remain at the bottom; the blue powder, which is the oxide, will be found to bear but a small proportion to the unoxydized metal; in the strong ointments, not more than about one-fourth.

The pilulæ hydrargyri, of the Apothecary's Hall in London, where they have the advantage of appropriate machinery, and great mechanical force for exposing every particle of the mass most effectually to the action of the atmosphere, and thus promoting the rapid absorption of oxygen, is notwithstanding, far from being certain in its strength. The minute globules of mercury may be readily seen in it with the glass, or separated from it by maceration in warm water.

From one hundred grains of blue pill which had been triturated for many days, twenty grains of running mercury were easily obtained, and numerous globules were still visible in the residuum. This article, previous to washing, presented all the appearances which usually denote the oxydation of the metal, and was pronounced good by those who had employed it in practice. One hundred grains of that prepared at Apothecary's Hall, London, yielded about the same results. The whole quantity of the metal contained in the hundred grains was 33.333 grains; it is, therefore, proba-

ble that not more than one-fourth of it was converted into black oxide.

The difficulty and tediousness of the process of trituration, by which the dispensatories direct the blue pill and ointments to be prepared, have sometimes induced the operator to add a small portion of sublimed sulphur in order to facilitate the extinction of the globules. This, however, changes entirely the character of the compound, forming an imperfect black sulphuret of mercury, and of course, destroys the value of the preparation. It may be detected by the *black* colour of the pills or ointment, which, if properly prepared, are of a blue colour.

The various strength and the uncertain effects of the different preparations of the black oxide here noticed, render it a desideratum in pharmaceutical chemistry, to discover some process by which the oxygen and mercury may be more directly and intimately combined, so as to produce a compound of equal efficacy with that prepared by the slow and imperfect means of trituration.

The protoxide of mercury was first described with accuracy by Dr. Boerhaave, who procured it by enclosing a small portion of the metal in a large strong phial, and attaching it to the spoke of a mill wheel; the rotation of the wheel kept the metal in constant agitation, exposing all its particles to the action of the air in the phial, by which means it was converted into a dark blue, or nearly black powder, to which he gave the name of Ethiops per se. He describes it as destitute of lustre, of a coppery taste, and wholly insoluble in water. The length of time required for this

process induced the idea of obtaining the oxide by the use of an acid; and accordingly, the nitrate and mild muriate of mercury have been decomposed by an alkali, in order to procure it. The result is a powder nearly similar to that described by Boerhaave and by Homberg, who obtained it in 1699. M. Guibourt asserts that the compound obtained by this process contains globules of running mercury, which may be seen with a glass, or rendered visible to the naked eye by subjecting it to pressure. It seems probable that the preparation which presented this appearance to him, must have been improperly made, or in some other way defective. Of several parcels which I have prepared, none have exhibited any globules, though examined through a glass of considerable power, nor could any be rendered visible, though the article was subjected to the force of a powerful screw press.

In the last (6th) edition of the American Dispensatory, the black oxide appears to be confounded with the hydrargyri oxidum cinereum, or pulvis hydrargyri cinereus, which is not the black oxide purely, but a compound of this with the triple salt formed by the oxide, ammonia and nitric acid. After directing the oxide to be prepared by boiling the sub-muriate of mercury in lime water, it observes: "when properly prepared it is the protoxide of mercury; but as frequently found in the shops, it contains a mixture of the triple salt, consisting of oxide, *ammonia*, and *nitric* acid." This could not occur in that prepared from calomel and lime water, because neither ammonia nor nitric acid are employed in any part of the process. The powder prepared with the solution of nitrate of mer-

cury and the water of ammonia, as directed in the fourth edition of the dispensatory, is different, both in appearance and composition, from the black oxide prepared by the other alkalies, and it therefore seems proper that it should be designated by a different name.

The Prussian College direct the preparation of an oxide, by precipitating a saturated solution of quicksilver in nitric acid, by the water of caustic ammonia, as long as a black powder is thrown down. But here, again, the triple salt is formed, which mixes with the oxide, and yields only the pulvis hydrargyri cinereus. The operation, though carefully performed, yielded a powder of a beautiful light blue colour, evidently containing a large portion of the triple compound.

After repeated experiments with the different alkalies, the following process has been adopted as yielding a preparation most nearly resembling, in its appearance and effects, the oxide formed by trituration. Take of sublimed sub-muriate of mercury, four ounces; pure caustic potass, four ounces, water, one pound. Dissolve the potass in the water; if any impurities appear, let it stand until the solution is perfectly clear, and then decant; mix the sub-muriate with this and shake them frequently. Pour off the liquid, and wash the precipitate with water, until the muriate of potass is totally removed; dry the residuum with a very gentle heat.

The American dispensatory recommends the use of the precipitated sub-muriate of mercury, thoroughly washed, but not dried, instead of the sublimed sub-muriate; but experiments made with the former prepara-

tion, did not appear to give it any preference over the calomel by sublimation.

The calomel of the shops, frequently contains a small portion of the muriate of mercury. When this is the case, on adding it to the solution of potass, an orange-coloured or red precipitate is formed with the black oxide, which injures the preparation. Particular care should therefore be taken not only to procure the best calomel, but also to free it entirely from the muriate by frequently washing it in boiling water. As the corrosive sublimate is more soluble in alcohol than water, it may be of some advantage to substitute it for the latter, toward the close of the process of edulcoration.

The protoxide of mercury yielded by the process here described, is a fine ponderous powder of a greenish black colour, destitute of lustre or odour, of a coppery taste, and insoluble in water. The relative proportions of oxygen and metal, which enter into its composition, have been variously stated. Fourcroy estimated that 100 parts of mercury were combined with 4.16 of oxygen. Sir Humphrey Davy and Seftstrom give 3.99 as the proportion of oxygen, and the Edinburg Encyclopedia puts it at 5. Chevenix computes that 12 parts of oxygen combine with 100 of metal, and the Portuguese chemists state the composition at 100 and 8.1. Of these various estimates we may assume, as a near approximation to the truth, the proportion of 100 parts of mercury and 4 parts of oxygen.

Of the medical virtues of this preparation, or the comparative effects resulting from its use, and that of the blue pill, it will not be expected that I should state

any thing from my own knowledge. Dr. Benjamin H. Coates, at whose suggestion the article was first prepared, and who has used it considerably during the last seven months, has politely furnished me with the following particulars. Used as a substitute for calomel, it appears to be more apt to vomit, and to act more as a cathartic, two grains, in almost every instance, operating several times. The largest dose given by him was twenty grains, in a case of puerperal peritonitis, and with success. It appears to act more mildly as (what has been called) a *contra-stimulant*, than calomel. As an alterative, it is beyond all comparison, preferable to the blue pill, prepared in the ordinary way by trituration, being more certain, efficient, and regular. Half a grain is quite a sufficient dose, to be taken at bed time, and probably one-fourth of a grain might answer the purpose, as this quantity appears to be equal in strength to three or four grains of the blue mass.

From these facts it is evident that the black oxide, prepared with potass, is a valuable medicine, and promises to furnish us with a substitute for the blue pill by trituration, which combines the advantage of far greater facility of preparation, with equal, if not superior, medical virtues.

On the Preparation of Goulard's Extract of Lead. By DANIEL B. SMITH.—*Read November 29th*, 1825.

GOULARD'S Extract of Lead is an acetate of lead, composed of two proportionals of protoxide of lead = 224, and one of acetic acid = 50. It is directed, in the pharmacopœias, to be prepared by boiling one gallon of distilled vinegar on two pounds of litharge. This process is objectionable, both on account of the waste of litharge and the uncertain strength of the acid, and consequently of the preparation. According to Philips, when the acid is of the specific gravity 1.007, the extract will have the specific gravity 1.220, and when the former is 1.009, the latter will be 1.309. Scheele prepared this salt by allowing a solution of sugar of lead to act, for a day or two, on a plate of lead. Thenard obtained it, boiling 150 parts of litharge in a solution of 100 parts of sugar of lead. In the "Manuel de Pharmacien," this salt is directed to be prepared by dissolving 100 parts of crystallized acetate of lead, and boiling it with 33 parts of protoxide. The liquor is to be filtered and reduced to the specific gravity of 1.267. (30° Baumè.)

Sugar of lead is a binacetate of lead, composed (when crystallized) of one proportional of protoxide = 112, one of acid = 50, and three of water = 27. The addition of one proportional of protoxide = 112, will convert this salt into an acetate, similar to the Goulard's Extract. The following formula is accord-

ingly suggested as being founded on correct principles, and yielding, at once, a solution of the proper, and of an uniform strength.

Binacetate of lead, crystallized,	15 ounces, troy.
Protoxide of lead,	9 ounces, troy.
Distilled water,	4 pints.

Boil them together for fifteen minutes and filter. The filtered liquid will weigh about five and a quarter pounds, is transparent, colourless, and of the specific gravity of 1.267. (30° Baumé.)

On Extract of Quinine. By JOHN FARR.—*Read December 27th*, 1825.

AN article under the above name having been used to some extent in this city and vicinity, it is due to the medical public that they should be made acquainted with the method adopted for its preparation.

In the summer and autumn of 1823, a season peculiarly memorable to the Philadelphians by reason of the alarming prevalence of intermittent and other fevers, the sulphate of quinine was first successfully prepared here. By adopting the methods laid down for the preparation of this article, I soon discovered, after separating two or three crops of crystals, much quinine still remained, in combination with resinous and colouring matter, in the form of a thick dark brown

liquid, but, in consequence of its viscidity, very difficult of separation.

The idea suggested itself that this residuum might become an efficacious medicine in the form of an extract, (a form by no means objectionable when exhibited in pills,) which would be less expensive to the patient, and equally efficient by an increase of dose; an important desideratum in consequence of the extensive prevalence of the disease amongst the poorer class of citizens.

I carefully reduced, by evaporation, some of this liquid to an extract, which I left with Mr. D. B. Smith for the purpose of trial by some of his medical friends. Dr. Emlen, being apprized of it, was the first who prescribed it, and was pleased with its effects in doses of two grains each; he afterwards diminished the dose to one grain, but did not find it succeed; he accordingly reverted to the original quantity of two grains, and, with few exceptions, discovered the happiest effects from its exhibition, and, that it is in no respect inferior to sulphate of quinine.

Drs. Parish and Wood were the next to make use of it in their practice, and found the results equally successful; afterwards it was prescribed by several other physicians, which occasioned a demand for the article equal to what we were able to furnish. It will be recollected that the extract could be obtained only in proportion to the quantity of sulphate of quinine prepared, and this proportion varied according to the quality of bark made use of.

From the finest kinds of bark the extract resulting would be about as one to four; but from the more in-

ferior kinds the proportion was larger. From that time to the present, the article has been prepared simply by the careful evaporation of the residuary liquor of the sulphate of quinine. From its deliquescent character, it is probable that the acid may exist in a little excess, which would thereby present the quinine contained in it, in the state of a super-sulphate.

It must be admitted that the name given to this preparation is not a scientific one, but the fear of selecting such an one as might possibly lead to a mistake in dispensing, by its resemblance to any other officinal medicine, seemed to warrant the deviation from the scientific course.

If this communication, relative to an article which is believed to be altogether American, is deemed worthy of publication in your Journal, it is cheerfully tendered to the committee.

On James' Fever Powders. By Dr. SAMUEL JACKSON.—*Read December 27th*, 1825.

THE fever powder of James, that gained so much reputation in England, was esteemed an active preparation. It was accused of producing, at times, very violent effects, and was even opposed, by some, as a dangerous medicine.

Dr. George Pearson, who undertook to analyse this preparation, found it to consist of oxide antimony 57, phosphate of lime 43, = 100. Antimony combines with

oxygen in different proportions. Thenard makes four oxides, but it is generally, and, for pharmaceutic views, may always be regarded that there are only two: the per and the protoxide of antimony. The first consists of antimony 73¼, oxygen 26¾, = 100; or, 1 atom metal = 44, 2 atoms oxygen = 16, = 60, weight of atom of peroxide. The last consists of antimony 84.62, oxygen 15.38, = 100; or, 1 atom metal = 44, 1 atom oxygen = 8, = 52, weight of atom of protoxide of antimony. Now, the first of these, or the peroxide, is perfectly inert, as has been frequently demonstrated; on which account, the antimonium calcinatum, which is a peroxide, was omitted in the Pharmacopœia Londinensis of 1809. It is the protoxide and its combinations alone that possess active powers. Dr. Pearson, in his analysis, did not determine which of these oxides existed in the James' powders he examined, and, consequently, it was left by him very imperfect.

It was from this analysis of Mr. Pearson that the formula for preparing the oxidum antimonii cum phosphate calcis of the Edinburgh, and pulvis antimonialis of the London and Dublin pharmacopœias, was adopted. It consists in heating sulphuret of antimony and hartshorn shavings, mixed together in a crucible, until vapours cease to arise. The remainder is then reduced to powder, and exposed to a white heat for two hours.

This preparation has been so generally adopted in the place of James' powders, that, in this country, the last are rarely to be met with. It is evident, however, from the high temperature employed, that the antimony must be oxided to a maximum, and that the product is the peroxide, and, of course, wholly inert.

That such is the fact has been demonstrated. Mr. Phillips mentions that, in consequence of Dr. Elliotson having exhibited one hundred grains pulvis antimonialis without effect, he examined two different parcels, and found, in each, the antimony was in the state of peroxide.

Dr. Paris, in his Pharmacologia, asserts, "that experience has established the fact, that James' powder is less active than its imitation," and in a note to the article pulvis antimonialis, vol. ii. p. 277, line 2, in which he notices Mr. Phillips' observations, he remarks that "it will be difficult for the chemist to persuade the physician, that he can never have derived any benefit from the exhibition of antimonial powder."

To ascertain whether the pulvis antimonialis would produce any well characterized operation on the system, I requested Dr. Whight, resident physician to the Alms House, to administer it in large doses. On the 12th, inst. it was given to a patient, whose stomach was in good condition, and who complained only of a slight pain in the hip, in the dose of ten grains; no effect resulting, in an hour fifteen grains more were given, and proving without any operation, in an hour twenty grains in addition were administered, making forty-five grains in three hours, without the slightest effect.

To another individual, whose stomach and general health was equally favourable to test the powers of this preparation, ʒiss. were given at a dose. A single evacuation, by stool, succeeded in some hours, but which cannot be said to have proceeded from the medicine; no nausea or other effect was produced.

To another patient ʒii. were given every hour, until

ʒvi. had been taken. No particular disturbance of any function was occasioned by it.

The above experiments, corroborating the statement of Dr. Elliotson, and being in strict accordance with the chemical analysis, must place beyond all manner of doubt that the pulvis antimonialis, prepared according to the directions of the English colleges, is an inert and wholly useless preparation, which should be expunged from the lists of the pharmacopœia.

Dissatisfied with the analysis of Mr. Pearson, other chemists undertook to determine the composition of James' fever powders with greater accuracy. Mr. Phillips states that he found it to be a mixture of peroxide of antimony and phosphate of lime, in the following proportions: peroxide antimony 56, phosphate of lime 44, = 100.

M. Pulli, a chemist of Naples, also subjected James' powder to a very rigorous analysis, and obtained results somewhat different from those of Dr. Pearson, or of Mr. Phillips. The constituents, he ascertained, were, in thirty-eight grains: perox. antimon. gr. xiv., phosphate of lime gr. viii., sulphas potassæ, gr. ix., potassa, containing protoxid. antimon. gr. vii.

He proposes, in consequence, a new formula for its preparation. He directs sulphuret antimony two parts, phosphate lime, calcined, one part, nitrate potash, four parts; powder and mix them together; put them into a covered crucible, and expose them to a strong heat.

In this process the nitrate of potass and the nitric acid are decomposed. Part of the oxigen of the acid combines with the sulphur of the sulphuret and forms sulphuric acid, which unites with part of the potash to

form sulphate of potash; the other portion of the potash, now free, acts on the antimony oxided to a minimum and retains it, while the larger portion of the antimony of the sulphuret is oxided to a maximum.

M. Pulli asserts, that, on analysing the product of this process, he obtained the same results as from the analysis of James' powders. The quantity of protoxide is, however, so small, that no very decided operation can be expected from it.

From all the observations and experiments that have been made, it is very evident that the James' powder, as well as its imitation, can be of very little utility, and that the same reasons that led the English colleges to discard the antimonium calcinatum, or diaphoretic antimony, once so famed for its usefulness in febrile diseases, apply equally to these preparations.

On the Syrup of Garlic. By DANIEL B. SMITH.—*Read December 27th*, 1825.

SYRUP of garlic is one of the preparations of the London Pharmacopœia of 1745, and, although rejected in the revised code of the London, is adopted in those of the Dublin and United States Pharmacopœias. As it is now kept in our shops, and prescribed by the physicians, it is important that it be judiciously prepared. All the pharmacopœias order it to be made by macerating a pound of fresh garlic in two pounds of boiling water, and making the infusion into syrup

by adding two pounds of sugar to one of the liquid. I have found the syrup so prepared to become mouldy, and to lose much of its smell and taste. Desirous of avoiding these inconveniences I prepared a vinegar of garlic, and from that a syrup, according to the proportions used in making vinegar and syrup of squills. Acetic acid is the proper solvent of the acrid principles of both these bulbs; the syrup thus made is much richer with the flavour of the garlic, and, in proportion to its strength, is less offensive than when made with water, and it does not mould or injure by keeping. The following formulæ are, therefore, submitted to the College as proper substitutes for the syrup of garlic of the American Pharmacopœia:

Vinegar of Garlic.

℞	Recent bulb of the garlic,	6 ounces.
	Distilled vinegar,	3 pints.
	Proof spirit,	4 fluid ounces.

Macerate the garlic for four days in a glass vessel, frequently agitating it; then express the acid, and add the spirit after the fæces have subsided.

Syrup of Garlic.

℞	Vinegar of garlic,	two pints.
	Refined sugar,	three and a half pounds.

Dissolve the sugar in a gentle heat so as to form a syrup.

On the Lytta Gigas. By Dr. Samuel Jackson.—*Read December 27th,* 1825.

In the early part of last summer, a species of cantharides was imported into this city, under the name of East India flies. Being perfectly strangers, none of the apothecaries were disposed to purchase them, although offered at a much lower price than the common cantharides. A sample of them was obtained and tried at the Alms House. They proved to be exceedingly active as vesicatories, and the whole were purchased for the use of the infirmary of that institution. They have been constantly employed since that time without a single failure. They produce a vesication, in general, much earlier than the Spanish fly, and, from being found so much more active, only half the quantity is added in making the emplastrum cantharides.

As it is understood that more of these flies will be imported, I have thought it would be useful to communicate to the college the above information, with a specimen for the cabinet, and a description of the insect.

It is the Lytta Gigas. The colour is a deep azure or sea blue; all parts of the insect, head, elytra or wing cases, body, and legs, are of the same colour, with the exception of the under part of the chest, on which there is a brown spot. Its size is from three quarters to an inch in length, being nearly twice the size of the lytta vesicatoria, or cantharides. They have little or no odour.

All of the species of the genus lytta are, I believe, endowed with vesicating properties. We have several that are natives, and which are found, at times, in quantities sufficient to make their collection an object; such is, particularly, the lytta vitata, or the common potate fly. From some comparative experiments I made, several years since, I found this species more powerful than the common run of the cantharides of the shops. Mr. Say discovered, in one of the expeditions under Major Long, a new species, which he has named Lytta Nuttale, after Mr. Nuttal, and which, he informed me, he ascertained to be very powerfully vesicating, and might be collected in considerable quantities.

On Spurious Antimony. By DANIEL B. SMITH.—*Read November 29th*, 1825.

As one of the objects for which the College of Pharmacy was instituted is the inspection and oversight of the drug market, it may be worth while to record the following circumstance.

A large quantity of ore was brought to this port during the present year, from one of the West India islands, which was invoiced as antimony, and some of it was actually sold as this article. A specimen of the ore is herewith presented to the college, a slight examination of which will satisfy the mineralogist that it is a sulphuret of lead in small scaly or granular con-

cretions. To remove all doubt I exposed the ore to the action of the blowpipe, and obtained the globules of metallic lead which accompany the specimen presented. It is but justice to the merchants to whom the cargo was consigned, to add that, as soon as the mistake was detected, the article was withdrawn from the market and exported to Europe under its proper name.

Remarks upon the Preparation of Black Drop, and the Acetic Tincture of Opium. By THOMAS EVANS. —*Read March 25th*, 1826.

THE Lancaster or Foulke's black drop has been esteemed superior to other preparations of opium, in consequence of its being less apt to produce constipation of the bowels, sickness of the stomach, or those distressing nervous affections which sometimes supervene the use of the gum itself, or the common tinctures of it.

Acetic preparations of opium have long been celebrated. As early as the time of Van Helmont, directions were given for preparing a tincture of opium with the juice of quinces; and the Anodynum specificum Paracelsi was compounded with the juice of sour oranges and quinces; and as these preparations were to be fermented, the product would be acetous acid. It is probable that the recipe for the modern black drop was taken from one of the above prescriptions. The preparation of this article was kept secret for many years,

but the recipe having come into the possession of Dr. Armstrong, he very obligingly gave it publicity, and it is now copied into most of the pharmacopœias. Its active ingredients appear to be opium, acetat of morphium, and a small portion of the oil of nutmeg.

The directions given for the preparation of the black drop, in Paris' Pharmacologia, Coxe's American Dispensatory, and the Pharmacopœia of the United States, are all substantially the same; and as we propose offering a few remarks upon the subject, we shall copy from the latter work. It is as follows, viz.

"*Vinegar of Opium, commonly called Black Drop.*

Take of Opium, half a pound,
Vinegar, three pints,
Nutmeg bruised, one ounce and a half,
Saffron, half an ounce;
Boil them to a *proper consistence;* then add,
Sugar, four ounces,
Yeast, one fluid ounce.

Digest for seven weeks, then place in the open air until it *becomes a syrup;* lastly, decant, *filter*, and bottle it up, adding *a little* sugar to each bottle."

The first inconsistency which presents itself in this recipe is the name given to the compound: "Vinegar of Opium" should mean, simply, a solution of opium in vinegar; but the article ordered is a *compound syrup of opium*, with nutmeg and saffron; it is, therefore, evidently incorrect to call it the vinegar of opium.

The direction to "boil the ingredients to a *proper consistence*" is entirely indefinite; and the strength of

the black drop will necessarily vary, according as the ideas of operators may differ in regard to the *consistence* which *is proper.* One person may think it of "a *proper consistence*" when a fourth of the menstruum is evaporated; another not until one half of it is dissipated; and hence the proportion of opium, contained in any given quantity, will be subject to correspondent variation.

After it is brought to "a *proper consistence,*" we are told to "digest for seven weeks, and then place in the open air *until it becomes a syrup.*" The digestion for seven weeks appears to be quite unnecessary. The proportion of opium to the vinegar is so great, that only a small part of it can he dissolved, and as vinegar is a ready solvent of opium, it would soon become saturated; all the purposes, therefore, of the tedious process of seven weeks digestion would be fully accomplished by the previous boiling. As the oil of nutmeg is volatile, and will be easily evaporated, the process of boiling, and subsequent exposure to the air, must nearly or quite dissipate it, so that if any benefit is expected to result from its entering into the compound, this would probably be lost. It would seem more proper that the minute division of the particles of opium should be effected by trituration, instead of boiling, and the article thus made would be equally safe and certain in its strength, since the opium is principally held in suspension. "Placing it in the open air *until it becomes a syrup,*" involves the same uncertainty as "boiling to a *proper consistence.*" The term syrup is used to designate liquids which differ greatly in the degree of their fluidity from a thin liquid,

to one little less dense than an extract, and consequently the strength of the black drop will be subject to variation, according to the ideas which the operator may entertain of the proper consistence of a syrup.

Lastly, we are directed to "decant, filter, and bottle it up, adding a little sugar to each bottle." The same vagueness and uncertainty which mark the former part of the recipe are likewise evident here: it is astonishing that directions so extremely indefinite and improper, for preparing an article powerful and even dangerous in its effects, should have been transcribed into professional works, without the smallest animadversion upon their incorrectness. What we are to understand by "*a little sugar,*" or of what capacity "*the bottles*" must be to which *that little* is to be added, we are not informed, both of which circumstances, it is evident, will affect the strength of the medicine. The article is already evaporated to the consistence of a syrup, consequently, any quantity of sugar, however "*little,*" which is added, will increase its bulk, and if the bottles in which it is contained be small, and "a little sugar added to *each one*" as is directed, the relative quantity of opium will be materially diminished. We cannot see the propriety of adding any sugar, since the formula is already "*a syrup.*"

The introduction of yeast into the compound appears also very unnecessary. Its use can only be, we apprehend, with a view of producing fermentation; but as the menstruum used is vinegar, the necessity for fermentation is done away.

Paris' Pharmacologia and the American Dispensatory direct the acetic solution of opium to be "boiled

to a *proper thickness;*" and after adding "a quarter of a pound of sugar and *two spoons-ful* of yeast, set the whole in a warm place near the fire for six or eight weeks, then place it in the open air *until it becomes a syrup.*" These directions are equally indefinite and improper with the former; in one respect they are more so, since they state the quantity of yeast at the uncertain measure of "two spoons-ful," leaving us to choose between large and small, table and teaspoons. It is not pretended that the strength of the preparation would be materially altered by the use of either of them, but it is certainly improper to give the direction for preparing so active and important a compound in such ambiguous terms. The American Pharmacopœia has amended this article by changing the measure to one fluid ounce.

It will require but a moment's reflection to convince us that the practitioner of medicine can never know what quantity of opium he is giving, when he prescribes this inelegant, unscientific, and uncertain preparation. He may either give so much as to produce far greater effects than he anticipates, or while endeavouring to guard against this, he may find that the quantity ordered is inefficient. The danger of using the black drop is greatly increased by the fact, that a large portion of the opium which enters into its composition, is *undissolved* and merely held in suspension by the syrup. It will consequently subside towards the bottom of the vessel containing it, leaving the superior portions of less than ordinary strength, and as these are poured off, the remainder may contain *double* or *treble* the proper quantity of opium. It is true, the dispen-

satories direct the syrup to be "*filtered,*" but it is obvious that it would not pass through any filter, the pores of which were small enough to detain the minute portions of undissolved opium. The article when prepared according to the pharmacopœia, *always contains a considerable volume of suspended opium.*

It needs no argument to show that the black drop should no longer be recognized as an officinal preparation. As the acetic compounds of opium are acknowledged to possess, in some cases, a decided advantage over all others, it seems desirable to substitute for the black drop a tincture, which shall possess those advantages without the objections to which that preparation is liable. Some years ago Dr. Joseph Hartshorne directed the preparation of such a tincture, according to the following recipe, viz.:

Turkey opium,	℥ii.
Strong vinegar,	℥ f. xii.
Alcohol,	℥ f. viii.

Triturate the opium with the vinegar; add the alcohol and digest with gentle heat for ten days; then filter through paper for use.

This tincture has been extensively used in this city and other places, and is found to possess all the virtues of the black drop. Those who prefer the addition of the aromatics, may prepare it by putting in half an ounce of nutmeg, bruised, and one drachm of saffron.

One fluid drachm of the simple tincture yields by evaporation, 3.5 grains of hard extract, of a dark brown or nearly black colour, shining fracture and

extremely bitter taste. The common tincture of opium (laudanum) contains only 2.3 grains of extract to the fluid drachm; it follows that the acetic tincture contains 9.6 grains more of the extract, in every fluid ounce, than laudanum. Its strength, in proportion to the latter, is as fourteen to nine.

The extract obtained by evaporating the acetic tincture, furnishes a very convenient mode for exhibiting the preparation in pills or powders. It is known by the name of acetated extract of opium, extractum opii acetatum.

From several experiments, which I have made, it appears that the proportion of extract yielded by this tincture, is affected in some measure, by the strength of the vinegar. Acetous acid dissolves a larger portion of opium than either alcohol or water. Of sixty parts of opium which were digested for several days in pyroligneous acid, fifty were dissolved, and, after the solution had been filtered through paper, were obtained by evaporation, in the form of a shining dark brown extract. Sixty parts of opium treated in the same manner with alcohol and water, each yielded only about half the quantity of extract.

As the vinegar of the shops is often impure and contains but a small portion of acetic acid, I would suggest the propriety of forming a menstruum with purified pyroligneous acid, water, and alcohol. I have accordingly prepared an acetated tincture of opium by the following recipe:

Pure pyroligneous acid,	℥ f. v.
Water,	℥ f. vii.
Alcohol,	℥ viii.
Turkey opium,	ʒii.

Mix the acid, water, and alcohol, and triturate the opium with the compound; digest with a gentle heat for ten days or two weeks and filter through paper for use.

The pyroligneous acid which I used was perfectly transparent and colourless, and contained about 30.5 per cent. of acetic acid, one hundred grains of it requiring 87.5 grains of crystallized sub-carbonat of soda to saturate it, which is about six times the quantity required by good vinegar.

The tincture prepared by this recipe yields, by evaporation, thirty-two grains of hard extract of opium to the ounce; its strength, compared with laudanum, is about as sixteen is to nine.

Where an aromatic tincture of opium is wanted, the following recipe will furnish an elegant preparation, viz.:

Pure pyroligneous acid,	℥ f. v.
Water,	℥ f. vii.
Alcohol,	℥ f. viii.
Turkey opium,	℥ ii.
Nutmeg, bruised,	℥ ss.
Cardamom seeds, bruised,	ʒii.

Mix the acid, water, and alcohol, and triturate the opium with the liquid; add the nutmeg and cardamom; digest for two weeks, then filter through paper for use.

SELECTED PAPERS.

Observations on the Expressed Oil of the seeds of Croton Tiglium. By John Frost, F.L.S. M.R.I.

Mr. Frost states that the plant is a shrub, seldom exceeding ten feet in height, of the class Monœcia and order Monadelphia, and of the natural order of Euphorbiæ.

The male flowers consist each of a cylindrical calyx, which is five-toothed. The corolla consists of five petals of a straw colour, and there are from ten to fifteen stamina. In the female flowers the calyx is many-cleft and reflected under the germen. There is no corolla, but there are three bifid styles. The capsule is tri-locular and smooth; each loculus contains one seed. The seeds are somewhat concave on one side and convex on the other, and they are of a brownish yellow colour. The leaves are pointed, nerved, serrated, supported on long petioles, and stand in alternate order.

The expressed oil of the seed is entirely soluble in ether and oil of turpentine, and partially so in alcohol. One hundred grains of the seed were digested in three drachms of sulphuric ether, specific gravity .71, and afforded twenty-five grains of fixed oil. One hundred grains of the oil yielded 21.5 grains of an acrid matter soluble in alcohol and ether, and 78.5 grains of inert fixed oil.

It has been recommended to administer the oil in the form of draughts, by combining it with mucilage of gum arabic and mint water, by some, and an alcoholic tincture by others; both which modes of exhibition are in the highest degree objectionable, as they produce a great sensation of heat about the fauces, which can be traced by the patient through the alimentary canal. The best manner of giving it is in the form of a pill, as by that means the unpleasant feeling about the throat is avoided. The tiglium oil seed which is on sale, is frequently admixed with olive, castor, or rapeseed oil.

Out of nearly ninety species of the genus croton, this is the only purgative species.

The expressed oils of the seed of three species of Jatropha, the J. multifida, J. curcas, and J. pandurælolia, have been

examined, and possess strong cathartic properties which, no doubt, pervade the whole family. These oils have nearly the same chemical habitudes as that of the seed of the croton tiglium. A similar principle exists in the seed of several species of ricinus.

Simple process for obtaining Meconiate of Morphia.—The following process is by Dr. Giuseppe Meneri: reduce good opium to powder, put it into a paper filter, add distilled water to it, and slightly agitate it; in this way, wash it till the water passes through colourless; then pass a little diluted alcohol through it; dry the insoluble portion (now diminished to one-half) in a dark place; digest it, when dry, in strong alcohol for a few minutes, applying heat; separate the solution, which, by cooling and after evaporation, will yield well crystallized meconiate of morphia of a pale straw colour.

Necessity of water in the preparation of Lead Plaster.—Attempting to form lead plaster, the emplastrum plumbi of the Pharmacopœiæ, without the use of water, steam being the source of heat, I was surprised to find, after several hours, during which time the litharge and oil had been kept at a temperature of 220°, or thereabouts, and constantly stirred, not the slightest appearance of combination; upon the addition of a small quantity of boiling water, the oil and oxide immediately saponified; water appeared, therefore, to be essential to the formation of the plaster. It also appeared probable, the oxide might be in the state of hydrate; to ascertain if such were the case, I precipitated, by potash, the oxide from a quantity of acetate; the precipitate, when washed, was dried by a heat of 220° till it ceased to lose weight; one hundred grains, heated to redness in a tube, gave off nearly eight grains of water, and assumed the orange colour of litharge; the recently precipitated oxide was therefore, no doubt, an hydrate; part of which, with somewhat less than two parts of olive oil, without any addition of water, at a temperature of 212°, formed, in half an hour, perfect plaster. Each of these experiments has been repeated with precisely the same results. I am induced to mention this fact, because all pharmaceutical writers limit the action of water to that of keeping down the temperature.

On Caoutchouc.—Mr. Faraday, having examined the sap of the tree which furnishes the caoutchouc, found it to contain, in 1000 parts,

Pure caoutchouc, - - - - - -	317	
Albuminous precipitate, - - - - -	19	
Peculiar bitter colouring matter, a highly azotated substance, and wax, - -	71.3	
Substance soluble in water, not in alcohol,	29	
Water, acid, &c. - - - - - -	563.7	
	1000	

The fluid was a pale-yellow, thick, creamy-looking substance, of uniform consistency. It had a disagreeable acescent odour, something resembling that of putrescent milk; specific gravity 1.01174. Exposed to the air in thin films it soon dried, losing weight, and leaving caoutchouc of the usual appearance and colour.

It is coagulated by heat and alcohol.

By mixing the sap with water no other change took place than mere dilution. When the pure or diluted sap was suffered to remain at rest, a separation took place; the opaque portion contracted upwards, leaving beneath a deep-brown transparent solution. By repeated washings in water the caoutchouc was obtained pure, without any alteration in its original state. When thus obtained it is a soft white opaque mass, which becomes, when perfectly dried, transparent and colourless, resembling exactly a piece of clear strong jelly. It has a very adhesive surface, which it retains after many months exposure to the air. Its fresh cut surfaces, pressed together, also adhere with a force equal to that of any other part of the piece. A strip of it, boiled in a solution of potash so strong as to be solid when cold, was not at all affected by it, except that its surface assumed a pearly appearance; no softening, above what would have been produced by water, occurred. It consists of 6.812, or nearly eight proportionals, of carbon, and 1.000, or seven proportionals, of hydrogen.

No means which have yet been discovered seem competent, when the caoutchouc has once been aggregated, to restore it to its pristine state. Previous to its aggregation it may be either scented or coloured. A solution of campher, in alcohol, was added to water, so as to precipitate the camphor in a flocculent state; a little of this was added to some

of the pure caoutchouc in water, well agitated, and then coagulated; the caoutchouc obtained was highly odourous.

In the trials made to give it colour, the body colours were found to answer best. Indigo, cinnabar, chrome-yellow, carmine, &c. were rubbed very fine with water, and mixed well with pure caoutchouc; the solution was then coagulated, and perfectly coloured specimens were obtained.

A portion of well-washed milky caoutchouc being added to olive oil, and the two beaten well together, a singularly adhesive stringy substance was produced, which, holding the water diffused through it, assumed a very pearly aspect, stiffened, and was almost solid; upon being heated so as to drive off the water it became oily, fluid, and clear, and was then a solution of caoutchouc in the fixed oil. On adding water, and stirring considerably, it became adhesive as before.

Oil of turpentine was imperfectly miscible with it.

London Journal of Science, No. 41.

Corrected Views relative to Picrotoxia and Menispermic Acid.—M. J. L. Casaseca has made a particular examination of the *Cocculus Indicus*, with a view of confirming the results obtained by M. Boullay. The latter chemist concluded from his first experiments on the berries, that they contained, amongst other things, malic acid, and a bitter venomous crystallizable substancee; but since then he has concluded, that the acid is distinct in its properties from all others, and has been by him, therefore, called the *menispermic acid*, and the bitter principle he has considered as a new salifiable base, classing with the vegeto-alkalies, and has named it *picrotoxia*.

M. Casaseca, in his experiments, made expressly with a view to the integrity of these two substances, has come to very different conclusions on the subject, and gives his reasons, which seem good ones, for so doing. His results generalized are, 1. That there is no such acid as the menispermic: 2. That the properties attributed to it, and which induced M. Boullay to consider it as a new vegetable acid, are due to a mixture of sulphuric acid with a particular organic matter: 3. That picrotoxia does not possess alkaline properties, and should not be considered as a new vegetable salifiable base, but as a particular bitter vegetable principle, as M. Boullay at first announced.—*Ann. de Chimie*, xxx. 307.

JOURNAL

OF THE

Philadelphia College of Pharmacy.

VOL. I. SEPTEMBER, 1827. NO. III.

On the Cerated Glass of Antimony. By Daniel B. Smith.—*Read September* 26, 1826.

My attention having been recently directed to this preparation in consequence of receiving an order for several ounces, I have thought the following remarks worth communicating to the College.

The formula of the Edinburgh and American Pharmacopœias is as follows:

Take of Yellow wax, one part.
Glass of antimony, eight parts.

Melt the wax in an iron vessel and throw into it the powdered glass; roast the mixture over a gentle fire for a quarter of an hour, continually stirring; then pour it out, and when cold, grind it into powder.

Dr. Duncan adds, in which he has followed Dr. Lewis, and has been followed by Dr. Coxe: "The glass melts in the wax with a very gentle heat; after it has been about twenty minutes on the fire, it begins to change its colour, and in ten more comes near to that of Scottish snuff, which is a mark of its being sufficiently prepared; the mixture loses about one-ninth of its weight in the process."

I do not know what is Dr. Lewis's authority for the

above statement; but it is plain that he has made or repeated a careless assertion, which a single trial would have enabled him to correct. The glass of antimony does not melt but at a heat far greater than that at which wax is decomposed. The directions of the Colleges are insufficient and inaccurate. The glass should be previously very carefully reduced to an impalpable powder. "Roasting over a gentle fire for a quarter of an hour," is not a clear nor sufficient instruction. The mixture must be kept at nearly as great a heat as the wax will bear without inflaming, and continually stirred, till it ceases to smoke, when it will be reduced to a black carbonaceous mass, which is the true cerated glass of antimony. The wax imparts sufficient tenacity to render the mass difficult of pulverization, until it is nearly reduced to a coal; so that the directions of the College for the preparation, and Dr. Duncan's rule for judging when it is finished, have not been the result of accurate experiment. The French Pharmacopœias are minutely correct in their description of this preparation, which renders it the more remarkable that so great an error should have crept into a work of such authority as Dr. Duncan's Dispensatory.

I have been shown in some of our most respectable shops, when I have inquired for this article, a light ash coloured impalpable powder, which has frequently, perhaps generally, been used in prescriptions where that preparation has been ordered. On examining the bottles in which it was imported, I found it to be labelled, "Prepared glass of antimony," and that it was evidently the levigated glass, pre-

paratory to undergoing the torrefaction with wax; and consequently destitute of those qualities for which the cerated glass is esteemed. These hints may serve to put the trade on their guard, in respect to a preparation which, though gone much out of use, ranks high in the opinion of some experienced practitioners.

Extract from the Code Pharmaceutique or Pharmacopœia Gallica. Article 5, p. 319.

ALCOHOLIC TINCTURES.

The strength of the alcohol that we employ, varies according to the nature of the substances to be dissolved. If we propose to extract all the soluble matter which these contain, perhaps each of their principal constituents would require a particular alcohol; but then the number of the formula would be augmented beyond all measure. For this reason we have thought three of the degrees of which alcohol is susceptible, would be sufficient to prepare all the tinctures used in medicine; viz.—12° or 22°, 22 or 32, and 26 or 36, of Baumé; we have not believed it useful to employ that which rises to 30 or 40 degrees. Amongst the medicines for the preparation of tinctures, in which each of these three degrees of alcohol appeared to us the most proper, we have chosen a certain number which will serve for examples to prepare the others.

As to the degree of heat, we have fixed it between 28° and 30° of Reaumur=35—37.5 centigrades, i. e. 95 of Fahrenheit.

Some persons have thought we could procure more

saturated tinctures by adding ammonia or potassa to the alcohol, to augment its power. But experiments have demonstrated, that alcohol of 26 or 36 degrees, mingled with an equal quantity of ammonia, does not dissolve more of the resin of guaiacum than when it is employed pure, and the relation of the simple solution to the other, is that of 8 to 6.7 in this case, and absolutely the same when we cause it to act on the root of valerian.

The ordinary potassa, or the sub-carbonate of potassa, increases still less the dissolving power. In truth, the alcohol cannot dissolve but a very small quantity of it, exceeding with difficulty 1-154, and it dissolves then much less of amber than before; that is to say, that the proportion of this bitumen is of 1-52.3, in pure alcohol, and 1-76.5 only in the other.

In relation to the pure potassa, which is infinitely more soluble in alcohol, since this liquor can take up more than one-fifth of its weight, it has not yet been employed for the preparation of tinctures; but probably there would result from it, a species of soap soluble in alcohol. As the strength of the tincture depends on the quantity of soluble matter which the alcohol contains, we have employed, in the simple formulæ, but general numbers, by which means, in placing them one under the other, it is easy to judge of the proportions at the first glance. But we have employed the avoirdupois weight (poids marchands) for the compound formulæ, from the fear that the respective proportions of many medicines would give room for some error, if they were expressed in a less precise manner.

SIMPLE ALCOHOLIC TINCTURES.

Tinctures prepared with alcohol between 26=36 degrees.

1. *Tincture of Amber.*

Take Amber finely powdered	50
Alcohol (between 26°=36°)	800

Digest for six days in a closed vessel; agitate the liquor from time to time, and afterwards permit it to stand an equal number of days. Decant, and preserve in a glass vessel well stopped. You will have a tincture in which the yellow amber will be to the alcohol as 1 to 52, 33.

2. *Tinctures of Resins and Balsams.*

Although balsams are dissolved with great facility in alcohol, and we can easily establish between these two substances the proportion of 1 to 2, we have nevertheless thought that it would be best that it should be of 1 to 4: because then, the tinctures are more easily incorporated in the potion or draught, and lose nothing of the substance which they hold dissolved. To prevent in a certain manner this latter inconvenience, we ought to commence by triturating the tincture well with syrup—if this enters, as is usual, in the potion; because there are no means more sure to prevent its decomposition when employed in mixture.

As to the weight of these tinctures, it is such that

twenty drops correspond very nearly to 10 grains, or 0.5.

Alcoholic Tincture of Benzoin.

Take Benzoin powdered	200
Alcohol—26=36 degrees	800

Digest for six days, agitating it from time to time; suffer it to stand for some days and then decant the tincture.

In the same manner may be prepared the tincture of balsam of tolu, of resinous juices, of liquid resins, as turpentine, balsam of capaiva, balsam of mecca, &c.; of solid resins, as resin of jalap, resin of guaiac, and of all the other resins and balsams.

Observation.—The operation being terminated, the matter dissolved is to the alcohol in the following proportions.

Tincture of Benzoin as	1 is to	5.14
of Balsam tolu	1	4.18
of Resin of guaiac	1	6.70

TINCTURES PREPARED WITH ALCOHOL 22 OR 32 DEGREES, BAUME.

TINCTURES OF GUMMOUS OR EXTRACTO-RESINOUS JUICES.

Tincture of Aloes.

Take Aloes grossly powdered,	200
Alcohol (22 or 32 degrees)	800

Digest for three days—strain the tincture, and preserve for use.

We may prepare after the same manner, the tinctures of scammony, of gum ammoniac, of assafœtida, euphorbium, and myrrh. *Observation.*—These substances dissolve better in alcohol of 22 or 30 degrees Baumé, than in that of 12 or 22°. We know, indeed, that there is more matter dissolved in the first than in the second.

By experiments made with tinctures prepared according to the manner directed; the proportion of the dissolved matter to the alcohol, was found to be

Tincture of Socotrine Aloes—as	1	4.88
Scammony	1	7
Myrrh	1	17
Assafœtida	1	8.28

TINCTURES OF MEDICINES ENTIRE.

Alcholic Tincture of Cinnamon.

(Laurus Cinnamomum.)

Take Cinnamon powdered	200
Alcohol (22 or 32° of Baumé)	800

Digest the tincture for six days—strain and preserve for use.

In the same mode may be prepared
Tincture of Cascarilla bark,
Roots of black hellebore,
Roots of contrayerva,
Leaves of asarum (asarum Europæum,)
of digitalis,
Cloves,
Saffron, of castor, of musk, and of ambergris.

Note.—Although the residuum of the materials may appear so entirely deprived of all soluble matter, that nothing more can be separated from it, when we submit it a second time to the action of pure alcohol; yet the first alcohol that we employ does not become perfectly saturated, since by pouring it on a fresh portion of the material, it will continue to separate the soluble parts, and thus acquire more energetic properties.

We have thought nevertheless, that the substances from which we wish to obtain the tincture, ought to be to the alcohol in the proportion of 1 to 4. This proportion has appeared to us the best, and that which enables us to procure tinctures the most uniform in their power, of whatever nature, and of whatever species the substance employed to prepare them may be.

By experiments conducted by means of alcohol, the strength of which was 22 or 32° Baumé, the proportion of the material dissolved was found to be to the alcohol

Of Tincture of	Cinnamon, as	1 to 26.55
	Saffron,	1 to 8.74
	Digitalis,	1 to 15.30
	Castor,	1 to 4.90

It may be further remarked, that the tincture of saffron prepared with alcohol of 22°=32° Baumé, has a more constant colour; and the red matters of it do not subside with the same facility spontaneously, as when a more feeble alcohol is employed in the preparation.

(TO BE CONTINUED.)

CANTHARIDES.

The question of the comparative activity of Cantharides, in their perfect state, and when worm-eaten, is discussed by M. Derheims and M. Farines, respectively, in the Journal de Pharmacie, Nos. 10 and 11 of last year.

As the conclusions at which these gentlemen have arrived, differ from the opinion entertained by many, and taught in some standard works, we shall proceed to lay before our readers a summary of their experiments.

Worm-eaten Cantharides, according to M. Derheims, present, to the naked eye, a grayish powder interspersed with shining particles. The dry powder placed in the focus of a compound microscope, shows the fragments of very minute insects, and a number of shining, greenish, and gilded points, the actual remains of the different external organs of the Cantharides.

If moistened and viewed in the same manner, beside the above shining particles, we find a considerable mass of living *apterous* insects, which are described at length by M. Derheims, and which he determines to be a variety of the tick, (Acarus.) The mass of worm-eaten Cantharides is, therefore, composed of the fragments of the fly, of these insects, and probably of matter secreted by the latter. The experiments of M. Derheims were intended to ascertain the relative vesicating properties of these materials. A plaster of worm-eaten Cantharides, and of the fly uninjured by the worms, were applied to the arm side by side.

In the course of twenty hours, the former had pro-

duced a slight redness of the part, while the latter had caused an abundant secretion, and raised a blister.

Again, the shining particles and also the ticks, having been respectively selected with care, from different parcels of the worm-eaten flies, the latter were powdered, and a plaster made from each, and applied as before. After twenty hours, it was found that the plaster made with the fragments of the flies had produced the ordinary vesication, but that from the ticks had in no way affected the epidermis. The conclusion to be drawn from these results is evident.

The worm-eaten mass owes its activity entirely to the fragments of the fly which it contains, and of course will produce but a feeble effect, decreasing in the ratio in which the proportion of these to the whole mass is diminished. The soft interior parts of the fly are well known to be first attacked by the worm. In order to ascertain whether they would afterwards prey upon the envelope, M. Farines exposed perfect cantharides in a bottle to the attack of thirty larvæ of the *anthemus museorum*. These worms immediately introduced themselves into the bodies of the flies, and after five days, finding no more food there, they came out by the same openings by which they had entered; and although M. Farines watched them for an entire week, they did not in that period attack the hard parts of the fly. The larvæ having been withdrawn, the excrement was selected, care having been taken to separate it from the parts not digested. Of this a plaster having been made, no effect was produced by it after remaining twenty-four hours. A similar plaster of the worm-eaten flies formed a small blister after eleven hours.—

The parts of the fly rejected by the worms, having been made into a plaster and applied as before, a small blister was the result after ten hours;—the powder of the sound cantharides produced a large blister after seven hours: the interior of the abdomen, and of the thorax, separated with care from the hard parts, produced a large quantity of serum in six hours; the abdomen alone gave a similar result; the elytræ, (wing cases,) the wings, the antennæ, and the legs, submitted each separately to the same experiment, did not produce any effect, although the application was continued for thirty hours.

From these results, M. Farines draws the following conclusions:—1st. That worm-eaten Cantharides are not so active as the sound; this is proved by the fact, that the mean of the action of the worm-eaten mass, and that of the parts rejected by the worms, which together represent the entire insect, are to that of the sound cantharides as 7 to 10.5, that is to say, that two parts of the sound Cantharides are equal to three parts of the worm-eaten.

2d. That the activity of the insect resides solely in the soft organs, and it is precisely these that are preyed upon by the worm.

3d. That the hard organs have no vesicating property.

4th. That the parts digested by the worms have lost their power. And as the increase of the destructive larvæ is at the expense of the parts on which they feed, these must of course be found in less amount in the active parts of the fly; and whatever activity the worm-eaten mass retains, is owing to the fragments of the

fleshy parts separated by the worms, and which have escaped their voracity. Since the activity of the cantharides resides in the fleshy parts, those parts which have been spared by the worms, being in a great measure deprived of it, must possess much less energy than the sound fly. When a prompt and active effect is required, the *abdomen* of the cantharides should be used.

To preserve cantharides from the attacks of the worm, camphor has been strongly recommended. M. Farines, however, has not been successful in protecting them by the use of this gum, and several of the experiments made by him seem to prove, that, in the climate in which he resides, (Perpignan,) it has no effect upon the worm. He observes that he has succeeded in preserving some descriptions of insects in his collection from the worm, by immersing them in impure pyroligneous acid: and he is of opinion that Cantharides may be secured from their attacks by steeping them for a few minutes in this liquid when first taken, instead of destroying them by the fumes of vinegar.

C. Y.

Philadelphia, July 7th, 1827.

Remarks on the Rhubarb of Commerce.

Extracted from the Edinburgh New Philosophical Journal.

It is well known that the plant which yields the rhubarb of commerce has been hitherto involved in much obscurity, and hence there have arisen many discordant opinions, both among botanists and pharma-

cologists, respecting the species of rheum which affords this valuable medicinal root. They judged it rightly to be a species of rheum, but of what particular species, without authentic materials, it was impossible for them to decide.

Linnæus considered it at first as the produce of his rheum rhabarbarum or undulatum, but he afterwards appears to have altered his opinion in favour of rheum palmatum; while Pallas, who certainly had better opportunities of gaining information on the subject, regarded it as composed chiefly of the roots of rheum undulatum and compactum. Mr. Sievers, an enterprising assistant of Professor Pallas, and well known by his interesting Letters on Siberia, published in the Nordische Beytragee, was sent by the empress Catharine II., purposely to try to obtain the true rhubarb plant from its native country; and although, after travelling for seven years in the countries adjacent to that in which it is found, he was unable to effect the object of his mission, yet he obtained sufficient information to convince him that the plant was then unknown to botanists. But it was reserved for Dr. Wallick, the zealous superintendant of the Calcutta botanic garden, to set this long agitated question to rest, by the transmission of seeds and dried specimens of the true rhubarb plant to Europe. Last spring, Mr. Colebrook received a quantity of the ripe seeds from Dr. Wallick, and presented a portion of them to Mr. Lambert, who has been so fortunate as to raise a number of plants of this valuable vegetable. The seeds were sown in pots, and, by the aid of artificial heat, soon vegetated. The young seedlings were trans-

planted into separate pots filled with rich earth, and the pots were gradually changed as the plants increased in size. By this treatment, as might well be imagined, the young plants grew vigorously, and, at the end of autumn, the leaves were from fifteen inches to a foot in breadth, and the footstalks nine inches long, with half an inch of diameter. The plant, on examination, proved to be identical with my rheum australe, from Gosaingsthan, in the Himalaya Alps. I find Dr. Wallick calls it Rheum Emodi, a name which I should certainly have adopted, had I been aware of it before the publication of my work. The whole plant is thickly beset with numerous, small, bristle shaped, cartilaginous points, which give it a rough feel. The leaves are of a dull green, and the footstalks are red and deeply furrowed. The native samples I have seen, appear to be smaller in all their parts, and the leaves, although flowering specimens, frequently not more than three or four inches broad; the footstalks four inches long, and slender, and the flowering stem not above two feet high. It is curious to observe how well this description accords with what Sievers has given us. The rheum australe appears to be peculiar to the great table lands of central Asia, between the latitudes of 31° and 40°, where it is found to flourish at an elevation of 11.000 feet above the level of the sea, and there is little doubt, therefore, of its proving perfectly hardy in our own country. Large quantities of the roots are annually collected for exportation in the Chinese provinces, within the lofty range of the Himalaya. The best is that which comes by way of Russia, as greater care is taken in the selection; and on its arrival at

Kiachta, within the Russian frontiers, the roots are all carefully examined, and the damaged pieces destroyed. This is the fine rhubarb of the shops, called improperly Turkey rhubarb. We have yet to regret the want of much interesting information respecting the mode of collecting and preparing the roots, and other details interesting in a commercial point of view. The unfortunate fate of Mr. Moorcroft, whose zeal and multifarious knowledge well fitted him for a scientific traveller, has deprived us of much valuable information on this, as well as on many other subjects.

June 3d, 1827.

Acids discovered in Castor Oil.

M. M. Bussy and Lecanu have obtained three new fatty acids from castor oil: one which they call *risinic acid*, is fusible at 72° Fahr.; another termed *elaiodic acid*, is fluid at several degrees below 32°; and the third they have denominated *margaritic acid;* this crystallizes in fine scales, and is not fusible below 264°. These acids are volatile, more or less soluble in alcohol, and perfectly insoluble in water; and they form salts of very distinct characters, with several bases, and especially with magnesia and oxide of lead.

When castor oil is distilled in a retort in the common way, there are obtained a small quantity of gas, water, and acetic acid, a colourless, crystallizable, volatile oil, ricinic and elaiodic acids, which condense with the oil in the receiver, and a solid matter, which remains in the retort. The quantities of acid, and of the volatile

oil, are nearly equal, and form nearly a third of the oil employed; the solid matter constitutes nearly the remaining two-thirds.

This is a very singular substance: it is a yellowish white colour, full of cavities, and somewhat resembling the crumb of new bread. It is insoluble in water, alcohol, æther, the volatile and fixed oils. It is dissolved by the alkalies, with which it forms a kind of soap. It is not decomposed at a high temperature, inflames when exposed to an ignited body, and burns very readily without melting. When, instead of distilling castor oil, it is treated with a solution of potash or soda, it saponifies even more readily than olive oil, and there are formed, ricinates, elaiodates, margaritates and glycorins. No other product appears; the glycorin amounts to about a fifteenth part of the oil, the margaritic acid about one thousandth, and the remainder is constituted of the other acids. These salts are very soluble in water, and act like ordinary soaps; the smallness of the quantity of margaritic acid, will account for its not being found in the product of the distillation. —*Journal of Pharmacy, February*, 1827.

Method of destroying the Empyreumatic Odour of Alcohol. By Dr. Witting.

The purification of alcohol by chloride of lime, is not expensive. The action is chemical, and analogous to that of bleaching. The empyreumatic parts are entirely destroyed.

The following is the manner in which it has been employed: two ounces of the chloride were mixed with spirit, into a uniform clear fluid, which was then put into a distillatory apparatus, with 150 measures of spirit; all the joints were then luted, and the distillation commenced. The first measure of product had a slight odour of chlorine, and was preserved apart for rectification; the rest of the produce was perfectly pure. The chloride made use of, should, when dissolved in twenty-six parts of water, bleach vegetable colour with which it may be mixed.—*Bull. Univ. E. VI.* 333.

Seidlitz Powders.

In the Journal de Pharmacie, for November, 1826, we find a critique by Mr. Planche, on the recipe for the patent seidlitz powder, as denominated in England, and recorded in the Pharmacologia of Dr. Paris. M. Planche and M. Robinet express their great surprise that the name of *seidlitz* should be given to any compound, not containing the sulphate of magnesia.

After some satirical remarks upon the patent medicines of England—which are perhaps equally applicable to all countries, the writer observes:

"All the merit of the English pretended seidlitz powder may be reduced to this: to *give to a salt purgative* or *alterative*, according to the dose in which we administer it, a more agreeable taste, by means of carbonic acid, without destroying its efficacy."

This is not all that is to be gained by the above-named composition. It can be successfully administered in cases of extreme gastric irritability; and those who are obliged to contend with the diseases which prevail during the summer season in America, believe this to be no inconsiderable recommendation. They then propose the following formula, as more worthy the title of *seidlitz.*

℞ Purified sulphate of magnesia in fine powder, ʒij.
Bicarbonate of soda ℈ij.
Mix carefully
Mark—powder No. 1.

℞ Pure tartaric acid in fine powder, gr. xl.
Mark. Powder No. 2.

To be taken in the same manner as the English seidlitz powder: that is to say, at the moment of effervescence.

The only advantage which this powder appears to us to possess over the preparation so long, and so beneficially employed in this country, is the difference in its cost.

The disadvantages are candidly stated by the French author. The principal of these, and one which appears to us sufficient to condemn it in the estimation of our apothecaries and physicians, is its liability to spontaneous decomposition when kept for any length of time, (say six months.) To remedy this evil they propose to employ the anhydrous or simply desiccated sulphate of magnesia; yet they acknowledge the only advantage derived from this form, is the *occupancy of less space.*

The anhydrous salt, he remarks, is attended during solution, with the evolution of heat sufficient to dissipate from the bicarbonate of soda a portion of its car-

bonic acid in the shape of gas. This effect having taken place, a speedy decomposition of the sulphate of magnesia follows. He admits, too, that by dissolving the contents of the two papers in quantities of water sufficiently small to be saturated, a double decomposition would take place, and sulphate of soda, and tartrite of magnesia, be formed at the expense of a portion of the sulphate of magnesia.

But as this would be obviated by employing the usual quantities of water, we rest our objection, (and we trust it is sufficiently sound to prevent this new preparation from being employed in this country,) entirely upon the fact, that the bicarbonate of soda loses part of its carbonic acid by *time*, and assumes the shape of sub-carbonate; a substance which decomposes the sulphate of magnesia, but can exert no influence over the tartrite of soda and potash, employed as the purgative ingredient of the English seidlitz powder.

A box of this elegant preparation, made after the English formula, often constitutes the only medicine chest of an American traveller; and our citizens, in their excursions to the different watering places, and rural retreats in the neighbourhood of the town, are in the constant habit of taking with them a medicine so happily calculated to remove the temporary *gastro enterite* occasioned by our hot and oppressive summers.

Our brethren of Paris may cavil at the *name*, but we must be permitted to say, we think their *alteration no improvement* of our *patent seidlitz powders*.

July 9. E.

Alkaline Digestive Lozenges. By M. D'Arcet.

(Translated from the Journal de Pharmacie, for March, 1826.)

Take of Bicarbonate of soda, dry and pure,	ʒj.	17grs.
White sugar,	℥iij.	26grs.
Volatile oil of mint,	gutta iij.	
Mucilage of gum tragacanth,	q. s.	
Make secundum artem lozenges,	$15\frac{5}{10}$	grs.

These lozenges, easily attracting moisture from the air, ought to be preserved in bottles well closed in a dry place.

They are very efficacious to restore deranged digestion: they destroy instantaneously the sourness which produces difficult digestion, and highly promote the functions of the stomach. Each lozenge weighing $15\frac{5}{10}$ grains, ought to contain nearly 0.05 of that quantity of bicarbonate of soda, and experience has proved that we can easily restore a bad digestion, by taking only one or two of the alkaline lozenges, and that it is rarely necessary to go beyond three.

We have not thought it necessary to translate the whole of the essay upon this subject. We have given enough to recommend the article, and designate the dose. We have no faith that it will suit all cases of indigestion, which is indeed a disease that assumes a variety of shapes and grades. Where acidity is the prominent symptom, it will be found an agreeable and useful remedy.

A method of detecting minute quantities of Opium, in solution. By R. Hare, M. D. &c. &c. &c.

Through the discoveries of Sertuerner, it is now well known, that opium contains an alkaline substance, called morphia, to which it owes its efficacy in promoting sleep, and relieving pain: also, that this alkali is naturally in union with an acid called meconic, which produces a striking red colour with solutions of oxyd of iron. Nevertheless, this property has not been proposed as a means of detecting opium; which has probably arisen from the circumstance that the meconate of iron does not precipitate. I have, however, contrived a method by which a quantity of opium not exceeding that contained in ten drops of laudanum may be detected in half a gallon of water.

My process is founded on the property which meconic acid has of precipitating with lead. Hence, by adding a few drops of acetate of lead to any infusion, containing any quantity of the drug in question, not more minute than the proportion above mentioned, an observable quantity of the meconate of lead falls down. The precipitation, where the quantity is small, may require from six to twelve hours, and may be facilitated by a very gentle stirring with a glass rod to detach the flocks from the sides of the recipient, which should be conical, so as to concentrate them during their descent. The meconate being thus collected at the bottom of the vessel, let about thirty drops of sulphuric acid be poured down on it by means of a glass tube. Let this be followed by as much of the red sulphate of iron. The

sulphuric acid liberates the meconic acid, and thus enables it to produce, with the iron, the appropriate colour which demonstrates the presence of that acid, and consequently of opium.

Method of preparing Denarcotised Laudanum. By R. HARE, M. D. &c. &c. &c.

AGREEABLY to the observations of the French chemists and physicians, the unpleasant effects of opium reside in a principle called narcotine, and Robiquet has informed us, that by digestion in ether, the drug may be depurated of that noxious principle. It struck me as soon as I became acquainted with the statements of Robiquet, that it was of the utmost importance to humanity to have it tested, and the result made known to my countrymen, if favourable.

Some opium, shaved by rubbing it on the face of a jack-plane, was subjected four times successively to as much ether of the specific gravity of .735 as would cover it, allowing each portion to act upon it for about twenty-four hours.

The opium was afterwards subjected to as much duly diluted alcohol as would have been adequate to convert it into laudanum, of the common kind, had it not been subjected to the ether. In the ether which had been digested on the opium, a deposition of crystalline matter soon commenced. The stopple being removed, and the mouth of the containing vessel, (in this case, a common French tincture bottle,) being

covered with blotting paper, in a few days nearly the whole of the liquid evaporated spontaneously, leaving much crystalline matter mixed with colouring matter. The former is, no doubt, the principle distinguished by Robiquet, since called narcotine.

The digestion of the opium with the ether, is conveniently performed in the papins digesters, which are sold at some of the hardware stores in this city.

The ether should be kept near the temperature of ebullition.

The first use made of the denarcotised laudanum, was by way of an enema of thirty drops, in the case of a child tortured by ascarides, to whom it gave early relief, inducing a comfortable, and apparently natural sleep, and causing subsequently no unpleasant symptoms. The second instance was a case of severe head-ache, which was relieved in about thirty minutes, by ten drops taken into the stomach. A refreshing slumber succeeded, which was not followed by any of the distressing sensations to which the patient has always been subjected, after taking common laudanum.

Versuch einer Monographie der China von Heinrich von Bergen, Droguerie-Makler—mit acht kupfertafeln in folio und zehn tabellen. Hamburg, 1826.

An elaborate treatise upon cinchona, under the above title, has been lately received in this country, of which we purpose hereafter to give an account.

At present we shall content ourselves with presenting a series of experiments upon various kinds of cinchona, exhibiting a view of the effects of different re-agents, and the quantity of cinchonia and quinia which they yielded—with descriptions of the external appearance, and reference to very accurately and beautifully coloured engravings of the same.

The letters in the following descriptions, refer throughout to the same circumstances, and are substituted for the convenience of the printer, in place of the tabular heads under which they are arranged in the original work, viz:

a, Importation into Hamburg, *b*, form and external appearance, *c*, colour of the decoction, *d*, deposite in the decoction, *e*, colour of the cold infusion, *f*, trial with a solution of tartarised antimony, *g*, with tincture of ichthyocolla, *h*, with tincture of galls, *i*, with oxalate of potash, *k*, with sulphate of iron, *l*, with muriate of iron, *m*, denotes the quantity of pure cinchonia, and *n*, that of sulphate of quinia yielded by a pound of bark.

In these experiments, the decoction was made by boiling one ounce of bruised bark in a pint of water, with a gentle heat, to eight ounces; the decoction was cooled, and then poured off, and the sediment noted after 24 hours standing.

The infusion was made by frequently shaking, during 24 hours, 1 ounce of powdered bark, with 8 ounces of cold water, then filtering by a compression pump, and subjecting to the various tests.

The solution of tartarised antimony was made by dissolving 96 grs. in 4 oz. distilled water.

The tincture of ichthyocolla—a half drachm to 4 oz. diluted alcohol—to be used warm.

The tincture of galls—1 oz. bruised galls to 6 oz. alcohol.

The solution of oxalate of potash—half ounce to 4 oz. distilled water.

The solution of sulphate of iron—1 oz. to 4 oz. of distilled water.

The solution of muriate of iron was a saturated solution of iron, in concentrated muriatic acid diluted with two parts of water.

In making the experiments, 12 drops of the tincture of galls and 15 drops of each of the others, were added to two drachms of the cold infusion of bark.

RED BARK.

No. 1, (Plate 1, fig. 1 & 4) *a*, 1823, from Cadiz, *b*, fine quill, fresh appearance, *c*, reddish ochre-yellow, *d*, not much to signify, somewhat darker than No. 4, *e*, somewhat deeper than No. 3, *f*, dirty orange coloured, copious precipitate, *g*, no alteration, *h*, yellowish precipitate, *i*, dirty orange coloured precipitate, *k*, dirty yellow coloured cloudiness, *l*, greenish yellow, transparent colour, *m*, 70 grs., *n*, 77 grs.

No. 2, (Plate 1, fig. 5, 8, & 9,) *a* from the same chest as the former, *b*, thick and broad flat stick, brownish red, fresh looking, *c*, golden sulphur colour, *d*, very remarkable, golden sulphur colour, *e*, somewhat deeper than No. 3, *f*, reddish white copious precipitate, *g*, as in No. 1, *h*, reddish deposite, *i*, peach blos-

som coloured deposite, *k*, ash coloured cloudiness, *l*, light green colour, *m*, 90 grs. *n*, 15 grs.

No. 3, (Plate 1, fig. 2 & 3,) *a*, 1819, from Cadiz, *b*, middling sized quills, judging from the faded appearance, perhaps more than twenty years older than the former, *c*, reddish yellow-ochre colour, *d*, somewhat less and lighter coloured than No. 4, *e*, somewhat darker than No. 4, *f*, whitish yellow coloured cloudiness, *g*, as in No. 1, *h*, white deposite, *i*, slight cloudiness, *k*, no change, *l*, yellower than No. 4, *m*, 97 grs. *n*, 31 grs.

No. 4, *a*, from the same case with the former, *b*, a broad, flat, yet not quite so thick a stick as No. 2, somewhat more solid and heavy, but as much faded as the former, *c*, between No. 2, and 3, yet nearer No. 3, *d*, small, dirty, reddish yellow, *e*, somewhat darker than No. 5, *f*, as in No. 3, *g*, as in No. 1, *h*, as in No. 3, *i*, slight cloudiness, *k*, as in No. 3, *l*, pale green colour, *m*, 80 grs, *n*, 30 grs.

No. 5, (Plate 1, fig. 6,) *a*, 1815, from London; this sort is no longer brought here, *b*, middle sized quills, of a streaked appearance, appears hard and old, *c*, dirty dark ochre, *d*, slight brown, *e*, of a light gray colour, *f*, light yellow copious deposite, *g*, as in No. 1, *h*, as in No. 3, *i*, whitish cloudiness, *k*, colour somewhat darkened, *l*, light bottle green colour, *m*, 150 grs. *n*, 11 grs.

No. 6, (Plate 1, fig. 7,) *a*, from the same case with the former, *b*, middling sized quills, thicker, but not heavier in proportion than the former, *c*, *d*, *e*, as in

No. 5, *f*, light yellow, very copious precipitate, *g*, as in No. 1, *h*, milk-white deposite, *i*, *k*, *l*, as in No. 5, *m*, 184 grs. *n*, 9 grs.

No. 7, *b*, thick, flat stick, but chiefly quills of different thickness and fragments. This is an old and faded sort which has been at least 80 years in Hamburg; *c*, cinnamon colour, *d*, very little, colour of kermes, *e*, pretty much of a wine yellow, *f*, *g*, *h*, *i*, *k*, no change, *l*, grass green colour, *m*, 20 grs, *n*, 7 grs.

HUANUCO BARK.

No. 1, *a* 1814, from Cadiz; a parcel of ten cases, *b*, fine dust sifted out, *c*, dirty yellow-brown, *d*, slight blackish-brown, *e*, somewhat reddish, *f*, *g*, no change, *h*, slight flaky cloudiness, *i*, *k*, *l*, somewhat clouded, *m*, 74 grs., *n*, *o*.

No. 2, *a*, as No. 1, *b*, small fragments, *c*, same as the royal bark, yet not so strong, *d*, small, dark ochre colour, *e*, faint yellowish, *f*, very little clouded, *g*, no change, *h*, somewhat whiter flaky cloudiness than No. 1, *i*, scarcely clouded, *k*, the whole of a pale green, *l*, light yellow-green, *m*, 210 grs. *n*, *o*.

No. 3, *a*, as No. 1, *b*, heavy flat stick, and larger fragments, *c*, *d*, *e*, *h*, *i*, *l*, as No. 2, *f*, yellowish white cloudiness, *g*, *k*, as No. 1, *m*, 187 grs., *n*, *o*.

No. 4, (Plate 2, fig. 1 & 2,) *a*, as No. 1, *b*, heavy fine quill, *c*, *d*, *e*, *f*, *h*, *i*, *k*, *l*, as No. 2, *g*, as No. 1, *m*, 190 grs. *n*, *o*.

No. 5, (Plate 2, fig. 3 to 11,) *a*, as No. 1, *b*, heavy

middle sized quills, *c*, *d*, *e*, *f*, *h*, *i*, *k*, as No. 2, *g*, as No. 1, *l*, somewhat darker, *m*, 210 grs. *n*, *o*.

No. 6, (Plate 2, fig. 12,) *a*, as No. 1, *b*, heavy thick quills, *c*, *d*, *h*, as No. 2, *e*, somewhat darker, *f*, as No. 3, *g*, *i*, *k*, as No. 1, *l*, as No. 5, *m*, 200 grs., *n*, *o*.

No. 7, *a*, 1807 from Lima, *b*, fine and middle sized quills, about 1-3 c. of the latter, not quite so heavy as the former parcel, nevertheless to judge from the faded appearance, older, *c*, *e*, *f*, *i*, as No. 2, *d*, lighter than the former, *g*, as No. 1, *h*, slight white flaky cloudiness, *k*, very little darker, *l*, as No. 5, *m*, 106⅔ grs. *n*, *o*.

No. 8, *a*, 1825, from Petersburg—sent there at an earlier period from Hamburg, *b*, middle sized quills, mixed with single thick ones of moderate weight, *c*, *e*, *f*, *i*, *k*, as No. 2, *d*, somewhat darker than No. 2, *g*, as No. 1, *h*, *k*, as No. 7, *m*, 100 grs., *n*, *o*.

No. 9, *a*, 1825, from South America, by the way of London, about 10 seroons, *b*, middling fine and middle sized sticks, *c*, a little darker than No. 2, *d*, as No. 8, *e*, *i*, *k*, as No. 2, *f*, as No. 3, *g*, as No. 1, *h*, as No. 7, *l*, as No. 5, *m*, 146 grs. *n*, *o*.

No. 10, *a*, 1821, from Cadiz, *b*, very thick quills of moderate weight, more brown than spotted, externally, such quills are seldom met with; *c*, *d*, as No. 8, *e*, *h*, *i*, *k*, as No. 2, *f*, as No. 3, *g*, as No. 1, *l*, as No. 5, *m*, 190 grs, *n*, *o*.

(TO BE CONTINUED.)

BIBLIOGRAPHICAL.

The DRUGGISTS' MANUAL, *being a Price Current of Drugs, Medicines, &c. &c.*

IN presenting to our readers a short analysis of this little work, we are desirous of subserving the interests of the profession generally, as well as those of the College of Pharmacy.

The first division consists of a catalogue of drugs and medicines, accompanied with columns, for the purpose of forming a price current. From the rapid and constant changes, and additions to the materia medica, such a catalogue had become a desideratum; and so far as we are capable of judging, the one presented appears singularly full and complete.

This "first and principal list of names," is made out in Latin, and "according to the modern scientific nomenclature."

Notwithstanding the difficulties which occasionally occur, from changing long established names, the simplicity, and practical usefulness of the chemical nomenclature, are so obvious, and have been so long acknowledged, that there needs no elaborate argument, to make its superiority over that of the "olden time" evident, to any one engaged in the pursuit of pharmacy or medicine.

In the language of the compilers of the Manual, "It familiarizes the druggist to names daily coming into greater use; it compels the apprentice to make himself acquainted with the first elements of chemistry, and with the almost universal language of prescriptions."

Although the main pillars on which this beautiful system rests, have remained unmoved amid the numerous discoveries of modern times; yet some of its important parts have been ingeniously assailed by some, and as zealously defended by others, of the first philosophers of the age. While, therefore, these savans, whose opinions are received almost as oracular, differ in their conclusions, we would recommend caution to be exercised in the adoption of new theories, which may be overturned by subsequent experiments, and which by introducing several names into the materia medica for the same article, are productive of evils of no trifling importance.

"A catalogue of English, and one of the old Latin names and synonyms, numbered to correspond with the numbers affixed to the price current, and forming an easy index of reference and translation, then follows. After these come catalogues of drugs in the French, Spanish, and German Languages. Although these are far from being complete, and are, from the nature of the work, mere abridgments, yet it is believed they are correct as far as they go, and that they will be found highly useful to the trade."

The remainder of the work consists of twenty-one tables, all of which will be found of greater or lesser utility to the apothecary, and many of which are only to be met with in works of science, to which every person cannot have access.

"In selecting the various tables which conclude the work, the compilers have been guided by a desire to make scientific accuracy the habit and characteristic of the trade. That all the various kinds of solutions,

acids, æthers, and alcohol, should be sold at prices proportionate to their specific gravity, and used of an uniform and ascertained strength; that the druggist should be familiar with the relation between troy weights, by which medicines are compounded, and the avoirdupois weight, by which they are sold; that the various tests of impurities in medicines, should be of ready access, and constant reference; that the doses and virtues of the medicines which he sells should be known to him, are positions which none will dispute."

The series of tables referred to, is well calculated to promote these desirable ends. The first seven are designed for the ready conversion of the different weights and measures into each other; and that of specific gravities, which follows, must be frequently consulted, as it is intimately connected with all of the scientific, and many of the commercial transactions of the apothecary.

The remainder of the volume consists of a variety of useful matter, condensed into the same forms, but which it is unnecesary to notice in detail. We cannot, however, pass over in silence, the tables of incompatibles, and chemical equivalents, both of which are so important to the pharmaceutist in his scientific pursuits. The latter particularly arrests the attention, and by committing it to memory, as suggested by the compilers, the student will obtain the master-key to chemistry."

The Druggist's Manual contains besides a well written Introduction, which glances at the early history of pharmacy, exposes the necessity of pharmaceutical

institutions, and the causes which led to the establishment of the school in this city.

The charter, constitution, and by-laws, are also introduced; the whole forming a neat octavo volume, printed upon post paper, and in its typographical execution deserving praise.

The committee by which the task has been so well performed that was assigned to it, is entitled to the thanks of the profession; and while we trust that the first edition will soon be disposed of, we look upon it as the harbinger of more important works, which shall at once display our improvement, and exert a decided influence over the prosperity of American pharmacy.

July 3, 1827.

JOURNAL

OF THE

Philadelphia College of Pharmacy.

Vol. I.] NOVEMBER, 1827. [No. IV.

SULPHATE OF QUININE.

The following speedy process for analysing the Cinchonas, is offered by M. Tilloy, pharmacien à Dijon. The object of it is to enable an apothecary to ascertain, in a short time, the probable proportion of the Quinine contained in a lot of bark before purchasing it. Ellis & Morris, of this city, have operated on this plan, and found it to succeed. "Put an ounce of Cinchona reduced to coarse powder, into 12 ounces of alcohol, of 30°=867, and submit it to a temperature of 40 to 50=to 72 to 90 of F. for half an hour, and then decant the alcohol. Add a fresh portion, and repeat the infusion; mix the two liquids, and throw in a sufficient quantity of acetate or sub-acetate of lead to precipitate the colouring matter and kinic acid: leave it at rest for some time, and then filter. Add to the liquid some drops of sulphuric acid, to separate the lead from the acetate, which should be in excess, filter and distil. There remains, besides the acetate, or Sulphate of Quinine, according to the quantity of sulphuric acid employed, a greasy matter, which adheres to the vessel; decant and pour on it ammonia, which precipitates the Quinine instantly. Too much ammonia will retain it in solution, and then the addition of a few drops of sulphuric acid

will cause it to precipitate. The Quinine washed with warm water, and treated with warm water acidulated with sulphuric acid and a little animal charcoal, (ivory black,) gives the sulphate very white. In this way, the author states, he has obtained 9 grains in six hours from an ounce of Cinchona, which is considerable, considering the loss occasioned by the charcoal, the filters, and that which remained in the mother waters. When the operation is conducted with care, and no Sulphate of Quinine obtained, it may be concluded that the bark is of bad quality. The kinic acid may be procured from the kinate of lead. E.

[*Journal de Pharmacie, October*, 1827.

We subjoin the following as interesting matter to the trade, from the North American Medical and Surgical Journal, for October, pp. 434.

Consumption of the Sulphate of Quinia in France.—MM. PELLETIER and CAVENTOU have applied to the French Academy, to be allowed to become applicants for the MONTHYON prize, in consideration of the medical improvements, which have grown out of their discovery of Quinia, and its sulphate. They state, that in consequence of their labours, the preparation of the Sulphate of Quinia has become a new branch of industry in France of the highest interest. To give an idea of the quantity of this sulphate, which is annually consumed, they laid before the academy a statement of the amount manufactured in two laboratories in Paris, one conducted by M. PELLETIER, and the other by M. LEVAILLANT. This document embraced the following particulars:

Cinchona bark, treated by M. Pelletier, on his own account,	270 quintals*
Do. by M. Pelletier, in conjunction with M. Delondre,	460
Do. by M. Levaillant, for M. Delondre,	420
Do. by Levaillant, for himself and various capitalists,	437
	1587 quintals

This quantity of Cinchona produced, of Sulphate of Quinia,	59,000 ounces
The other manufactories of France are estimated to furnish,	31,000
Forming a total of	90,000 ounces.

Now, if we assume that thirty-six grains is about the average quantity taken by each patient who employs this medicine, then the ninety thousand ounces may be supposed to be divided amongst one million four hundred and forty-four thousand individuals.

MM. P. and C. add, that these details will not appear exaggerated, when it is considered, that the Sulphate of Quinia is employed over the whole of Europe, that it is exported to America, and that French and English commerce conveys it to the Levant and East Indies.—*Revue Medicale, May*, 1827.

M. Henry, Jun. has written to the French Academy, for the purpose of requesting that his name also may be placed on the list of candidates for the prize, founded by M. de Monthyon for important medical discoveries. He alleges, in support of his claim, that the public is indebted to him for the process, by which the Sulphate of

* The quintal contains about 100 pounds.

Quinia is obtained very expeditiously, and in greater proportion, and more economically, than by the method of MM. PELLETIER and CAVENTOU.—*Archives Generales, March*, 1827.

Extracts from the Code Pharmaceutique or Pharmacopœia Gallica.

TINCTURES PREPARED WITH ALCOHOL OF 12 or 22° BAUME.

Tincture of Cinchona.

Take of Pale Cinchona Bark, in powder,	100
Alcohol, (of 12 or 22 degrees,)	400

Digest for six days, strain and preserve for use.

In the same manner prepare tinctures of the red bark of Cinchona, wood of Guaiacum, (called eau de vie de Gayac;) of the Roots of Ipecacuanha, Valerian, Jalap, Elecampane, and Gentian; of the Bulbs of Squill and Colchicum, of the Leaves of Wormwood and Nux Vomica. It is necessary to observe great care in the preparation of the last article.

The proportion of the materials taken up by the alcohol will be found to be,

In the Tincture of Wormwood, as	1 to 20.4
of Pale Cinchona Bark,	1 to 25.47
of Guaiacum,	1 to 22.50
of Jalap,	1 to 43.40
of Ipecacuanha,	1 to 30
of Valerian,	1 to 28.34
of Gentian,	1 to 16.73

In the Tincture of Squill, 1 to 6.65
of Nux Vomica, 1 to 36.90

Each of these substances affords a stronger tincture with weak than with concentrated alcohol.

Tincture of Cantharides.

Take of Cantharides, coarsely powdered, 100
Alcohol, (of 12 or 22 degrees,) 800

Digest for 4 days, and filter for use.

The proportion of the material dissolved, will be to the alcohol, as 1 to 55.86

Weak alcohol answers much better than the concentrated to make this tincture—that is to say, it separates much more completely the acrid matter of the Cantharides.

Tincture of the Extract of Opium.

Take of the Aqueous Extract of Opium, 30
Alcohol, (of 12 or 22 degrees,) 360

Place them in a glass vessel well closed, until the extract is dissolved; and then filter.

The extract will be to the alcohol in the proportion of 1 to 12

It is necessary to observe, that in order to divide easily the doses of this medicine, that 24 drops are equal to 12 grains, or 0.6, and consequently contains one grain, or 0.5, of extract.

Tincture of Catechu.

Take of Extract of Catechu, 30

Of Alcohol, (12 or 22 degrees,) 120
Digest for 4 days, and filter for use.
The extract dissolved, is to the alcohol as 1 to 4

Camphorated Alcohol.

Take of Alcohol, (12 or 22 degrees,) 500
Camphor, 10
Mix, and after the camphor is dissolved, filter the liquor for use.
The camphor is to the Alcohol in the proportion of 1 to 50
The quantity of it may be augmented as much as is thought proper.

COMPOUND ALCOHOLIC TINCTURES.

Compound Tincture of Wormwood.

Take of Dried Leaves of great Wormwood, ℥ss. or 16
of small do. ℥ss. or 16
Cloves, ℥ss. or 16
White Sugar, ℥ij. or 8
Alcohol, (22 or 32 degrees,) ℔ss. or 250
Digest for five days, with a gentle heat, and filter.
The proportion of the medicines to the alcohol, will be as 1, to 5.2

Balsamic Tincture, commonly called Balsam of the Commander of Permes.

Take of Dried Roots of Angelica of
Bohemia, cut small, ℥½ or 16
Dried flowers of St. John's-wort, ℥j. or 32

Of Alcohol, (22 or 32 degrees,) ℔2 ʒ4 or 1.128

Digest for 15 days with a gentle heat in a closed vessel, agitating it from time to time.

Filter, and add to the strained liquor,

Myrrh,	ʒ½ or 16
Olibanum,	ʒ½ or 16

Digest as the above, and then

Take of Styrax Calamita, or Balsam of Peru, 3 or 96

Benzoin selected,	ʒ3 or 96
Socotrine Aloes,	ʒ½ or 16
Ambergris,	gr. 6 or 0.3

Triturate these substances, and put them in the foregoing tincture. Expose the whole for 40 days to the sun; filter and preserve in a well closed vessel.

The medicines will be to the alcohol very nearly in the proportion of one-fourth.

Aromatic Tincture, commonly called Eau de Bonferme.

Take of Nutmegs,	ʒ2 or 64
Cloves,	ʒ2 or 64
Canella,	ʒ2 or 64
Flowers of Pomegranate	ʒ2½ or 80
Alcohol, (22 or 32 degrees,)	℔2 or 1000

Macerate for 15 days.

Filter by expression, and pour on the residuum,

Alcohol, (12 or 22 degrees,) ℔2 or 1000

Macerate then again for 15 days, and filter by expression.

Mix the two liquors together, and pass them through common paper.

The ingredients will be in proportion to the

Alcohol, as	1 to 7.3

Aromatic Tincture with Sulphuric Acid, commonly called Vitriolic Elixir of Mynsicht.

Take of Root of Calamus,	j or 32
Galangal,	℥j or 32
Flowers of Chamomile,	℥½ or 16
Leaves of Sage,	℥½ or 16
Wormwood,	℥½ or 16
Mint,	℥½ or 16
Cloves,	℥ß or 12
Canella,	℥ß or 12
Cubebs,	℥ß or 12
Nutmegs,	℥ß or 12
Ginger,	℥ß or 12
Wood of Aloes,	℥j or 4
Lemon Peel,	℥j or 4
Sugar,	℥ß or 96

Reduce all these substances to a coarse powder and introduce them into a matrass.

Pour upon them,

Alcohol, (12 or 22 degrees,)	lb½ or 250

At the end of 6 hours, add

Sulphuric Acid,	℥4 or 128

Then, at the end of twenty-four hours, add again,

Alcohol, (of 12 or 22 degrees,)	lb1½ or 750

Digest the whole for 4 days, then strain the liquor by expression, afterwards filter through paper for use.

The proportion of the Aromatic substances
to the Alcohol, is a little below that of 1 to 5
That of the Sulphuric Acid, is as 1 to 8
And that of the Sugar, to the entire liquor,
a little under 1 to 12

B. E.

[TO BE CONTINUED.]

From the quarterly summary of the North American Medical and Surgical Journal, for October.

CHLORIDE OF SODA.

As this substance ranks with chloride of lime, as a disinfecting agent, and has been lately employed both in France and England with encouraging success, as a remedy in hospital gangrene, phagedenic, syphilitic, and ill-conditioned ulcers, &c. it may be useful to give the formula of LABARRAQUE for its preparation. The French weights, for greater convenience, are converted into the nearest English weights.

Take of pure Carbonate of Soda, 5½ lbs.
distilled Water, 22 pints.

Mix, in a bottle of such capacity, as to be one-fourth empty. Then into a glass balloon bottle, (capacity about two quarts,) with a long neck and large mouth, put the following mixture :

Chloride of Sodium, (common salt,) 1¼ lbs.
Peroxide of Manganese, 1 lb.

Into the mouth of the balloon bottle, lute two tubes:

one large and curved, communicating with a bottle containing a small quantity of water, from which a similar tube must proceed to the bottle containing the carbonate of soda; the other, an S tube, intended to afford the means of adding the sulphuric acid conveniently. The quantity of acid necessary to disengage the chlorine from the above mixture is 1½ lbs. diluted with about a pint of water.—*Medico-Chirurgical Review, April*, 1827.

The above process merely consists in passing a stream of chlorine through a solution of carbonate of soda, until the latter is saturated. It is, however, incorrect to suppose that a solution of chloride of soda only is formed. It is well known that, in this process, part of the chlorine is converted into chloric and muriatic acid, by the oxygen and hydrogen proceeding from decomposed water; and that these two acids, together with the remaining chlorine, combine severally with the alkali, so as to form, at the same time, chlorate, muriate, and chloride of soda. We may, therefore, consider the so called Chloride of Soda, as in reality a complex saline solution.

The above is the rationale usually given when explaining the nature of the liquid, formed by the action of chlorine on potassa, in the process for obtaining chlorate of potassa, and may be assumed as applicable to the case of soda. Nevertheless, Dr. GRANVILLE asserts, in a letter addressed to the Editor of the Medico-Chirurgical Review, and published in the April number of that journal, that he has recently ascertained by experiment, that LABARRAQUE's liquid does not contain *Chloride of Soda*, but is a mixture of 73.53 chloride of sodium, (muriate of soda,) and 26.47 chlorate of soda, in every 100

parts, with an excess of chlorine, equal to twice the bulk of the water employed.

Dr. GRANVILLE goes on to state, that the salts present are not the disinfecting agents; for upon being obtained in a dry state by evaporation, and redissolved in water, the remarkable properties of the liquid are lost. Hence it is evident, that the real disinfecting agent is the chlorine which it holds in solution; and simple water, containing the same proportion of chlorine, would have the same effect, though very inconvenient to the operator, on account of the escape of the gas.

Dr. G. considers LABARRAQUE's liquid as consisting of

1	Proportional, chlorate of soda,	108
5	chloride of sodium,	300

Dr. G. alleges that he has ascertained the *modus operandi* of chlorine on animal matter in a state of putrefaction, and that, during that action, new compounds are formed, which he has analysed. He also remarks that the most economical process for obtaining the liquid of soda for disinfecting purposes, is to saturate with chlorine a solution of chloride of sodium, (common salt.) His views on these points will be given in detail in a memoir which he intends shortly to communicate to the Royal Society of London.

Extract from Magendie's Formulary. 5th ed. 1827. pp. 111.

PIPERINE.

THIS substance was discovered in pepper, (piper nigrum,) (Jour. de Phys., No. 2, 1820,) by M. ŒRSTÆDT, who regarded it as a vegetable alkali.

M. PELLETIER has since made an analysis of it, and has proved that Piperine, the crystalline matter of the pepper, is not a vegetable alkali; that it has much resemblance to resins, and is of a particular nature. (See Chemical Examinations of the Pepper, by M. PELLETIER, 8vo, Paris.)

This substance has just been employed in Italy as a febrifuge. I have not yet confirmed by my own experiments the properties which M. DOMINIQUE MELI has attributed to it, (Annali Univ. di Medicini, t. 27 and 28;) I shall, therefore, limit myself here to indicating the process which is used to obtain the Piperine, and the doses in which it may be employed, in order to induce new attempts with it.

Mode of preparation. Take 2 pounds of the grains of black pepper bruised, which must be digested at a low heat in 3 pounds of alcohol at 36°. It is then to be carried to ebullition, left to rest and cool, then decanted, and the operation repeated with other alcohol. The two liquors are mixed, and into this tincture is poured 2 pounds of distilled water and 3 ounces of hydrochloric acid. The liquor is disturbed, and a precipitate formed of a dark gray colour, which is formed, for the most part, of a fatty matter. This deposit being separated, there are collected on the filter and on the sides of the vase quite handsome crystals, which are nothing else but the Piperine. By adding water until the liquid is no longer troubled, a fresh quantity is obtained. This process is the same as that indicated by M. PELLETIER. In the memoir which we have cited, this chemist has also obtained the crystalline matter of pepper by the following method: After having exhausted the pepper

by alcohol, and evaporated the tincture, a fatty or resinous matter is obtained, which is submitted to the action of boiling water, which is renewed until the water is colourless; then this fatty matter, thus purified by washing, is dissolved in warm alcohol, and the solution abandoned to itself for several days: many crystals are obtained, which are purified by solutions in alcohol and ether, and by repeated crystallizations. The alcoholic mother waters, abandoned to themselves, may furnish more crystals. This crystalline matter is the Piperine.

The crystalline matter of the Piperine is presented under the form of prisms with four sides, of which two parallels are evidently the largest: the prisms are terminated by inclined faces. This substance is totally insoluble in cold water; boiling water dissolves a small quantity, which precipitates on cooling. It is very soluble in alcohol, less so in ether, more soluble in warm than cold.

M. Pelletier found that Piperine had great analogy with the resin of pepper of cubebs, which M. Vauquelin compares to balsam of capaivi: the Piperine in the cubebs must have lost its crystalline properties.

Cases in which the Piperine may be administered. According to M. Dominique Meli, the Piperine possesses the same febrifuge properties as the alkalies of the bark. He has cured, at the hospital of Ravenna, a great number of fevers with this remedy; and he goes so far as to say that its action is more certain and more prompt than the sulphate of quinine. The Piperine must be used in a smaller dose than the sulphate of quinine. Intermittent fevers are the only diseases in which this remedy has been used. It might be used, also, in blennorhagies, in the place of the cubebs pepper.

According to M. MELLI, the acrid oil of pepper has the same febrifuge properties as the Piperine, but in a less degree. This is owing, no doubt, to that matter retaining a certain quantity of crystalline matter.

OPIUM.

We extract the following information respecting the price and consumption of Opium in China, from a letter, addressed to a gentleman in this city, by his friend, residing in Canton, dated December, 1824.

From this document it appears that Opium is a contraband article, and prohibited from entering the "Celestial empire" through the regular channels of trade by severe edicts of government. Nevertheless, enormous quantities of it are smuggled; and consumed by the mandarins or nobles, and higher classes of society generally. The lowest estimate of the annual consumption, was, from 6 to 7000 chests, of a picul, or 133 pounds, each,—and one or two years before 1824, it amounted to 10,000 chests. Different qualities, having different prices, and taking their names from the countries which produce them, or ports whence they are exported, are known there. The price fluctuates constantly, from the supply being so uncertain. The kind denominated Patra was worth, at the time stated, above 1500; the Banares, 920; and the Smyrna, 850 dollars, per chest. Two years before, the first brought 2600, and the two others about 2200 dollars,—the highest price ever known. The lowest quotations were in 1796, when it sold for 180 to 200 dollars

per chest. From 3 to 4000 chests enter the ports of China from Bengal, where it is monopolized by the English East India Company. This company pays the natives 300 rupees per chest, for cultivating it. At the auction sales in Bengal, it brought in the early part of 1823, 5000, and at the same period of 1824, 2500 rupees per chest.

The annual cost of this drug to the Chinese, is estimated at 12,000,000 dollars, and that from, 1,500,000 to 2,000,000 people, are in the daily habit of consuming portions of it, by smoking it with tobacco.

The consumption of it nearly doubled in the short space of 8 years, from 1816 to 1824, notwithstanding the utmost vigilance of the government, and the severe decrees of his "Sacred Majesty."

The following facts respecting the commercial history of Opium, in Java and other parts of the east, taken from Crawford's Indian Archipelago, may be properly appended to the above account. Formerly the whole of the demand in these islands was supplied from Bengal; but since the opening of trade with the Americans, and the enlargement of British commerce in the east, a considerable proportion comes from Turkey and Malwa. The natural cost of a chest of Bengal Opium weighing about 140 lbs. is estimated at 112 sicca rupees, or £14 sterling. The government, which monopolizes the culture, limits the quantity grown to about 4500 chests, which are disposed of at the sales at Calcutta, which take place by auction in December and February, with the view of suiting the markets of China and Calcutta, where nearly the whole is consumed.

The price rose through successive years, from 1801 to

1817, from 738 to 2300 sicca rupees, its highest price. This price, exceeding more than twenty times its natural cost, showed the supply unequal to the demand, and consequently acted as a bounty on the article, and caused the importation of it, as above noticed, from Turkey and Malwa. It is made the subject of heavy duties throughout the Oriental islands. The native princes monopolize the sale, and the European government of Java farms the privilege of vending the drug *in a medicated* or *prepared* form. When the supply was regular, the cost to the consumer was about 3000 Spanish dollars per chest, an advance upon the market price of 133⅓ per cent.; upon the monopoly price of Bengal, of 168¾ per cent.; and upon the first cost, of 3025 per cent. These duties, if judiciously managed, it is believed, would yield a nett revenue to the government of about 1,000,000 of Spanish dollars.

When Bengal furnished the whole supply to the islands, the average amount was 900 chests annually, of which Java alone consumed 550. The consumption, however, fluctuates with the price. When the English took possession of Java, the retail price was $5000 per chest, and the annual quantity consumed only 30 chests. When the price fell to about $4000, the sales increased to 50 chests; and when it only brought $3500, the consumption advanced to near 100 chests.

The number of consumers increased and diminished with these variations in price: when it was low, many partook of it who never used it before; and when it increased in value, those who had acquired the habit desisted altogether, and substituted some other narcotic less agreeable and more pernicious.

On its introduction, the Turkey Opium met with the opposition, arising from prejudice, which all new things must encounter. The Chinese, who are the farmers of the Opium excise, could scarcely be induced to take a few chests in 1815. In their contracts with merchants shortly afterwards, they consented to take one-fourth Turkey Opium. In 1817, they expressly stipulated for it to the amount of one-half they required, although the price had doubled, and Bengal Opium remained stationary. In 1818, they demanded that three-fourths should be of the Turkey article, and the price approximated to the Bengal drug, which considerably diminished in value.

Bengal Opium, which had for many years brought in China from 12 to 1500 dollars per chest, fell in 1818 to 800. Having said so much respecting the commercial history of this narcotic, and alluded to the fascination which it exercises over the Oriental islanders and nations, an account of their method of preparing and using it, may not be uninteresting. It is universally smoked by the tribes of these islands, and other people of Asia. The case is exactly reversed with respect to it and tobacco. The following description is copied from *Marsden's Sumatra.* "The raw Opium is first boiled or seethed in a copper vessel, then strained through a cloth to free it from impurities; and then a second time boiled. The leaf of the *tambacu,* (tobacco,) shred fine, is mixed with it, in a quantity sufficient to absorb the whole; and it is afterwards made up into small pills, about the size of a pea, for smoking. One of these being put into the small tube that projects from the side of the Opium pipe, the tube is applied to a lamp,

and the pill being lighted, is consumed at one whiff or inflation of the lungs, attended with a whistling noise. The smoke is never emitted by the mouth, but usually receives vent through the nostrils, and sometimes, by *adepts, through the passage of the ears and eyes.* This preparation of the Opium is called *maadat*, and is often adulterated in the process, by mixing Jaggri or pine sugar with it; as is the raw Opium, by incorporating with it the fruit of the pisany or plantain." B. E.

Reports of the Medical Society of the city of New York, on Nostrums, or Secret Medicines.

Published by order of the Society, under the direction of the Committee on Quack Remedies.

We conceive we shall be gratifying the curiosity, as well as imparting useful information to the apothecaries of our city, and other parts of the union, by furnishing them with a concise view of the labours of the medical society above mentioned, as set forth in their reports on the popular nostrums of the day.

It will not be denied that the medical profession has had sufficient aggravation, for the last ten years, in this country, to excite its indignation, and rouse it to exertion. Pharmacy and medicine are so intimately interwoven, and essentially dependent upon each other, that the one cannot receive an injury without the other participating to a greater or lesser extent in its effects. It will be seen by these reports, that to deceive the multitude, and practice upon their credulity and ignorance, at

the expense of their purses, and too frequently of their health, and even lives, constitutes the great art of the empiric, and the main source of his wealth: for his remedies, when most successful, are made up of the very fruits of philosophy, contrived by the skill and sanctioned by the experience of our predecessors.

The Medical Society of the city of New York merits the thanks of the community, for having stripped quackery of some of its mystery and borrowed plumes, and exposed, in naked deformity, its shallow and wicked foundation.

The first report of the committee embraces an inquiry into the composition, effects, and mode of operation, of CHAMBERS' remedy for Intemperance. They present the following analysis of this nostrum, made by Mr. G. CHILTON, chemist, at their request.

"Having procured a parcel of the remedy from Mr. CHAMBERS, which weighed 225 grains, it was divided into portions of 25 grains each, for the purpose of making separate trials, previous to a more complete investigation. The powder contained in the parcel, the general colour of which is gray, is evidently a mixture of differently coloured particles, by no means uniform in their size. The first step in the examination, was to pass it through a sieve of bolting cloth, in order to separate the coarse part from the fine. In the coarse part left upon the sieve, could be easily distinguished parts of cochineal grains, masses of black matter, like lampblack, with red and brown parts of skins or pods, having the pungent taste of pepper, and affecting the nostrils like Cayenne. The fine part which had passed the sieve, was boiled with one ounce of water in a Florence flask, and filtered;

the solution, which resembled an infusion of cochineal, passed with difficulty through the filtering paper: the residuum, after washing with another ounce of water, and dried, was a powder consisting of black and yellow particles, *sulphur in powder mixed with carbon.* The solution, which exhaled the odour of tea, had very slightly the odour of sulphur also. Various re-agents, such as vegetable infusions and tinctures, metallic salts, &c. threw down precipitates from this solution. Muriate of barytes, nitrate of silver, and oxalate of ammonia, had comparatively little effect; from which we may infer, that neither sulphates, muriates, nor lime, in notable quantities, were present. Among the effects produced by re-agents on the solution, the precipitates afforded by acetate of lead and hydro-sulphuret of ammonia were the most interesting, as they correspond with the presence of *tartar emetic.* The precipitate thrown down by acetate of lead, was dissolved by dilute nitric acid. The precipitate by hydro-sulphuret of ammonia, was orange red, which might arise from arsenic as well as from antimony. The following experiment was made to determine this point. To a fresh portion of the solution, carbonate of potass was added, and then sulphate of copper, the carbonate of copper precipitated was intensely *blue;* had the orange precipitate owed its colour to arsenic, the precipitate would have been green. As a further confirmation, a few drops of a watery solution of white oxide of arsenic were added, which converted the precipitate, with its supernatant fluid, to a lively grass green.

"As these experiments seemed to demonstrate the presence of tartrate of potass and antimony, the next step in the examination was, to obtain it in an insulated state.

For this purpose, 50 grains of the remedial powder were boiled in two ounces of water; the filtered solution was evaporated to dryness; on re-dissolving the dry mass, a portion of it was left; by slowly evaporating this second solution, a crystalline mass was deposited, mixed with colouring matter. By repeating the crystallizations, which were much impeded by the presence of gummy matter, perfectly well formed tetrahedral and octahedral crystals of emetic tartar were obtained; these crystals weighed six grains; but as they were obtained by frequent crystallizations, they were probably not more than one half of the tartar emetic contained in the 50 grains. If we allow this supposition to be correct, the whole parcel of remedy, weighing 225 grains, must have contained a drachm of this very active ingredient. The residuum from the 50 grains of the last experiment, which weighed 13 grains, was digested in alcohol, sp. gr. .825, which took up 2½, and left 10½ grains. This alcoholic solution left, by evaporation, a red resinous extract, extremely pungent and hot: by adding water to this alcoholic solution, a milkiness was produced by the precipitation of the resin. The 10½ grains which the alcohol refused to take up, in the last experiment, were treated with muriatic acid, which dissolved out six grains, and left 4½ grains; by adding potass to this solution, a purple powder fell down, which weighed two grains. The 4½ grains left by the muriatic acid in the last experiment, were exposed in a crucible to a red heat; sulphur burned off with its characteristic blue flame and suffocating odour, and three-fourths of a grain of silex was left.

"It is evident from these experiments, that the constituents of CHAMBERS' remedy are the following, viz.

Emetic tartar—capsicum—sulphur—carbon—cochineal, and gum. The silex probably belongs to the pod of the capsicum. The gummy ingredient is probably gum arabic, and was somewhat embarrassing, as it impeded the passage of the solutions through the filter, and affected the crystallizations. The sulphur is seen floating on the surfaces of the solutions, and appears as a yellow powder in the residuums, mixed with carbonaceous matter.

"On a second trial with another parcel of the medicine, fifty-four grains of tartar emetic, in its crystallized form, was procured, and the mother waters still held considerable in solution, which, on account of the gum entering into its composition, could not be conveniently separated."

From this analysis, it appears that tartar emetic is the active ingredient in the compound. This is evident from its producing emetic and cathartic effects, and raising pustular eruptions on the skin when applied; which happened in the case of the person employed to powder it, who, ignorant of the articles, said, "it was strong stuff," as it caused the backs of his hands and arms, which were bare, to break out in painful pustules. The committee believe the quantity of powder put to each half pint of the "patient's favourite drink," contains 4 4-5 grains of tartar emetic; each wine-glass full, 1 1-5 grains; and the fasting dose rather more than 3½ grains. A quantity sufficient, under ordinary circumstances, to produce not only distressing nausea, but full vomiting. An examination into the pretensions of this compound follows, prefaced by a single quotation from Mr. CHAMBERS' circular, viz. "I am very positive a free use of

the mixture will not injure the constitution: also positive it will cure, if sufficient be taken." The language of empiricism must be dogmatical, for the mass of men are convinced by round assertions, and not by arguments. They draw a frightful picture of the moral, intellectual, and physical ruin which follows habitual intemperance; and clearly show, that though temporary benefit has been derived by individuals, from various remedies, none has yet been discovered which will certainly destroy the love for the intoxicating draught. Tartar emetic was employed by RUSH and DARWIN, more than 50 years ago; the latter gentleman used it with the view to its producing disgust, the former as a remedy in delirium tremens. The same powerful drug formed the basis of a remedy for intemperance, sold by a Mr. L'OISEAU, in New Orleans, and which acquired a temporary reputation, and was purchased by several planters, for the purpose of curing this habit in their slaves. The effects, however, were found to be so uncertain generally, and so violent and dangerous occasionally, that the proprietor, from prudential motives, was induced to change his residence.

Bitters, tonics, aromatics, and the mineral acids, have all been employed in conjunction, or alone, with no more permanent success. The combination of bitters and elixir vitriol was the famous German remedy to answer this intention.

Notwithstanding the occasional benefit which has resulted from the use of this and similar articles, in drunkenness, (which act, by producing an irritation in the stomach, that, while it lasts, suspends the inclination for a fluid, which answers the same purpose,) they can-

not except it from the black catalogue of nostrums so justly obnoxious to censure and reprobation.

Such complicated derangements of the system arise from long continued drunkenness, which full and frequent vomiting may either increase, or precipitate the patient on death, that we believe an apothecary, when made acquainted with the composition of CHAMBERS' remedy, would feel as reluctant to expose it to indiscriminate sale, as he would so much pure tartar emetic on his own responsibility.

The second report of the committee is on LEROY's Médicine Curativé.

This drastic nostrum has been used in France, the French colonies, and among the French population in our northern and southern cities. It enjoyed at one time great celebrity in France, until a few victims were sacrificed to its indiscriminate use, and the constituted authorities were called upon to interfere and enforce the law against secret remedies; it then began to be suspected, and lose the popular favour. In order to screen himself from the law above noticed, "LEROY was obliged to take a higher ground than the exclusive possession of a medicinal article." "He pretends to lay open to the public gaze the whole arcana of medicine," and adopts the maxim, "one disease and one remedy" —"a principle of corruptibility predominating in the fluids, the sole cause of disease,—its evacuation through the prima viæ the only cure." His remedy, which he

prescribes on all occasions, and for all diseases, and which he says, in some obstinate cases, requires to be repeated sixty or one hundred times, he graduates into four degrees, differing from each other only in the relative quantity of the ingredients. The first degree he gives to children, and very debilitated subjects, and is one-fourth weaker than the second degree, with which he commences the treatment of ordinary adults. The third is one-third stronger than the second degree, and is given when the other fails; the fourth degree is twice the strength of the second, and is, in like manner, resorted to when the third proves ineffectual. The following is his recipe for the second degree, the ordinary preparation for adults.

R. Pulv. Res. Scammon,	℥ij
Pulv. Rad. Convoli. Turpeth.	℥j
Jalap,	ʒviij
Alcohol dilut.	℔xij

Infuse for 12 hours in a heat of 76°, strain, and add to the tincture the following syrup.

R. Senna Opt.	ʒviij
Aq. bullient.	℔ij

Infuse for 5 hours, express, and add to the liquor,

Saccharr. Alb.	℔ijss

And boil to a syrup.

Leroy directs this medicine to be commenced in dose of two table spoonsful, and increased, if necessary, to four, which, if not sufficient, must be succeeded by the third, commencing with the same dose as in the preceding, and in like manner increased to the same quantity; when, if it does not produce the desired effect, it must give place to the fourth degree, in doses of four table

spoonsful, and increased if necessary; which degree will always be found quite sufficient for any case. A free use of diluent drinks is allowed during the operation of the purgative, and all other remedies withheld, except occasional blisters. This preparation is used in all diseases located, as he chooses to say, below the pyloric orifice of the stomach. The articles are all well known, except the turbith root, an antiquated remedy, and a species of jalap. It has been superseded by the jalap of the shops, and generally esteemed inferior to it as a cathartic; though by others its powers are rated as more active than the officinal drug.

For those diseases which are situated above the orifice of the stomach, in his nosology, he gives the following preparation, styled his vomi-purgative.

R. Fol. Sen. opt.	℥iv
Vin. Hispan.	℔iv

Infuse for three days, frequently shaking the mixture, and obtain the tincture from the senna leaves by strong expression.

To each pound of the wine add ʒj of tartarized antimony, and filter for use.

"The dose for an ordinary adult is a table spoonful; to a child seven years old half the quantity, to be repeated in an hour and three quarters, and then every hour and a half till the proper effect be produced. His rule is to produce seven or eight full emetic and cathartic operations, but he has no objection to its going beyond this point." He commences the treatment of all his supra-pyloric diseases with this compound, and finishes them off by active and violent purging, continued until the disease vanishes or the patient sinks. The latter event,

according to the testimony of Dr. ARNOUT, late of Metz, and other French physicians, has not unfrequently taken place.

The consequences of its indiscriminate use became so alarming, as to induce the French government to call the attention of the Royal Academy of Medicine of Paris to the subject. "By analysis of portions of the vomi-purgative prepared by LEROY himself, they found that a given quantity, asserted by him to contain $1\frac{1}{8}$ grains, contained $3\frac{1}{2}$ grains of tartarized antimony; and also that a given portion of the purgative contained ʒijss of a resinous material, which he asserted to contain only 38 grains."

In conclusion, the committee were acquainted with two cases in New York, which required the interference of medical men to save the lives of the patients. One of these was great exhaustion from violent and long continued purging. In the other, the remedy appeared to act as an acrid and dangerous poison, from the effects of which the man was with difficulty saved.

The third report of the committee contains a brief history of SWAIM's Panacea, and its kindred "*depurative syrups,*" with an investigation into their composition, remedial powers, and modus operandi.

The basis of these syrups, of which we now have such a multitude, each claiming superiority over the other, is "a concentrated decoction of sarsaparilla, mixed with other articles, of little or no efficacy, to give them flavour, and to disguise their true character. The introduction into medicine of this form of preparing the sarsaparilla, is

probably coeval with that of the article itself, in 1530. The formulæ are to be found in most of the ancient French works on pharmacy. The following is taken from the Code Pharmaceutique.

R. Rad. Sarsap. ℔ij
Aqua tepid. oxij

Infuse for 24 hours: afterwards boil for 15 minutes, express, and to the residuum add

Aqua, ox

Boil to ovj, repeat twice or thrice, then mix all the liquors, and boil gently with

Flor. Borag. off.
Flor. Rosar. Alb.
Fol. Sennæ.
Sem. Anis. *aa* ʒij

Reduce to one-half, strain, and add

Mel. Com.
Sacchar. Alb. *aa* ℔ij

And boil to the consistence of a syrup.

It is stated in the index that this differs little from the other celebrated anti-syphilitic syrups, either in its nature or proportions. Charlatans have always been in the habit of making immaterial alterations, more effectually to disguise their nostrums and prevent detection.

"The ordinary dose of the above compound is one or two ounces, twice a day, with or without a grain of corrosive sublimate to each pound. The patient, at the same time, taking freely, throughout the day, of sarsaparilla ptisan. Besides this syrup, a number of others have, at different periods, enjoyed in France a reputation more or less temporary. The most important of these was the *Rob de Laffecteur*, which has been extensively employed

throughout France and her colonies. This was invented by BOIVEAU, a well instructed French apothecary, who induced, for the sake of bringing it into notice, LAFFECTEUR to allow it the sanction of his name. It was always maintained by the inventor, that no mercurial salt was contained in his syrup; and the analysis of the chemists to whom he submitted it, confirmed his assertion; they said the compound would decompose corrosive sublimate."

This preparation, too expensive for general use here, was employed in 1811 by some New York physicians, in a desperate case, with success. Dr. M'NEVIN, who was engaged in the consultation on this case, afterwards gave publicity to the formula for its preparation, derived from M. ALLION, a French chemist.

Among the first who experienced its benefits was Mr. SWAIM, a book-binder, in his own person. He was furnished with the recipe by Dr. A. L. QUACKINBOSS, who administered it to him; and immediately began his career with it under the title of *Swaim's Panacea*, for the cure of those diseases, for which the rob had been used and celebrated so many years ago. He adhered closely to the form and directions of Dr. M'NEVIN, at first, and insisted on the use of the sarsaparilla ptisan, as some of us know who were in the habit of selling him this root at that time. It is believed he has now substituted the pyrola umbellata (pipsisewa) for the sassafras, guaiacum, or marsh reed grass. The odour of the oil of wintergreen is also very perceptible. Nor does he at present employ the ptisan, as formerly. The medicine may very probably be improved by these changes, made more palatable, and less liable to nauseate; but the great

object of these alterations is with all charlatans the same —to disguise more effectually the principal ingredients of their nostrums.

"The following is M. ALLION'S recipe for the preparation of LAFFECTEUR'S rob, which is generally believed in France to be the correct formula."

R. Rad Sarsap.	
Arund. phragmit. *aa*	℥xxx
Flor. Borag. off.	℥viij
Fol. Senna,	
Flor. Rosar. *aa*	℥ij
Sacchar.	
Mel. opt. *aa*	℔6

Boil the sarsaparilla and marsh reed-grass in 9 pints of water for 1 hour; strain off the decoction, and pour the same quantity of water on the residuum, which is to be boiled for 2 hours: towards the end of the boiling add the borage flowers, senna, and rose leaves, and then strain off, and to both decoctions add the sugar and honey, and boil the whole to the consistence of a syrup.

The dose for men is 6 table spoonsful, and for women 4, taken, without addition, at six in the morning,—and two hours afterwards to commence drinking the sarsaparilla ptisan in tumblerfuls, and take 7 of these before dinner.

The sarsaparilla ptisan, is made by boiling 2 oz. of the roots, in three quarts of water, to two quarts, letting it infuse during the night, and straining it off in the morning. In summer, and for women, ℥iss. of the sarsaparilla will be sufficient. The ptisan is to be drunk warm in winter, and cool in summer, and to constitute the patient's sole drink. It would be foreign to our purpose to say

any thing of the sketch given in the reports of the medical properties, or modus operandi, of this syrup. To make our paper more complete, we have translated the following formula for the "*Sirop or rob antesyphilitique de Laffecteur, (usitée à Naples uselon le docteur Savaresi.*)

R. Sarsaparilla	℔ix
Guaiac.	
China Root,	
Sassafras, *aa*	℔vj
Yellow Cinchona,	℔iij
Flowers of Borage,	℔iss
Aniseed,	ʒiv
Molasses, clarified with the white of eggs,	℔xxx

First, make a decoction of the bruised sarsaparilla; then add the China root, and guaiacum. The cinchona and sassafras shaved, are not to be added till towards the end of the boiling. Finally, introduce the borage flowers and the aniseed, when the clarified molasses is put into the infusion to finish off the syrup. The dose is the same as in the *sirop de Cuisinier* given above, and it is used in the same affections.—[*Virey's Pharmacy.*

It would be to the interest of apothecaries generally, to keep one or both of these syrups as officinal preparations. By putting them at a reasonable price, and advertising them occasionally, physicians would know where to find them, and they would become more generally used by the regular practitioner. B. E.

NOTE.

We omitted to mention, in our number for September, that the two articles on the preparations of Opium, by Professor Hare, were, with the consent of the author, taken from the Philadelphia Medical and Physical Journal, for May or June, we are uncertain which. The omission was *entirely accidental.* E.